Australian Government
Australian Transport Safety Bureau

ATSB

Cognitive Interviewing

ICAO APAC AIG Workshop 15 August 2023 Singapore

Presented by
Stuart Godley and Mike Walker
Australian Transport Safety Bureau

Objectives

- Understanding of best-practice techniques for interviewing to obtain the most complete and correct recollection of memory

Aims of an interview?

Aims of an interview?

Source: Presenter media

- Obtain as much accurate and relevant information as possible
- In addition:
  - help develop good relationships with external parties
  - help promote safety within the transport industry

Why do we need training?

Why do we need training?

Source: ATSB

- Important source of evidence for most investigations
- Research shows good techniques are not commonly used
- Not a natural skill
- Complex skill, needs continual training, practice and feedback to maintain and enhance skills

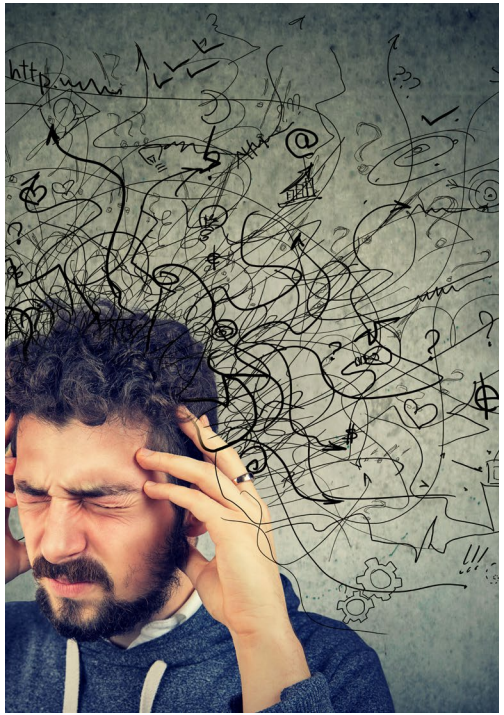
Who do we interview?

Who do we interview?

- Eyewitness
- Involved person
  - Pilots, controllers, maintenance engineers, cabin crew, …
- Subject matter expert
- Organisation members
- Next of kin, friends
- Emergency responders

Characteristics of interviewees?

Characteristics of interviewees?



Source: ISTOCK

- Biases
- Anxiety
- Reluctance
- Hostility

- Why do people have these – how does it affect information pass on?

Characteristics of interviewees?

Source: ISTOCK

- Expertise
- Age
- Culture
- Language skills
- Injuries

- How can these affect?

Are witnesses reliable?

Are witnesses reliable?

Example: AA587 A300 accident

- New York, November 2001
- 354 eyewitness reports

354 witness observations:

- 56% reported fire (most on fuselage), 22% reported no fire
- 23% reported smoke, 21% reported no smoke
- 19% reported left bank or turn, 8% reported right bank or turn
- 79% saw downward motion, but only 19% saw spinning, corkscrewing, cart-wheeling
- 64% saw part(s) separate (most nonspecific), 11% reported no parts separating

Human information processing

In

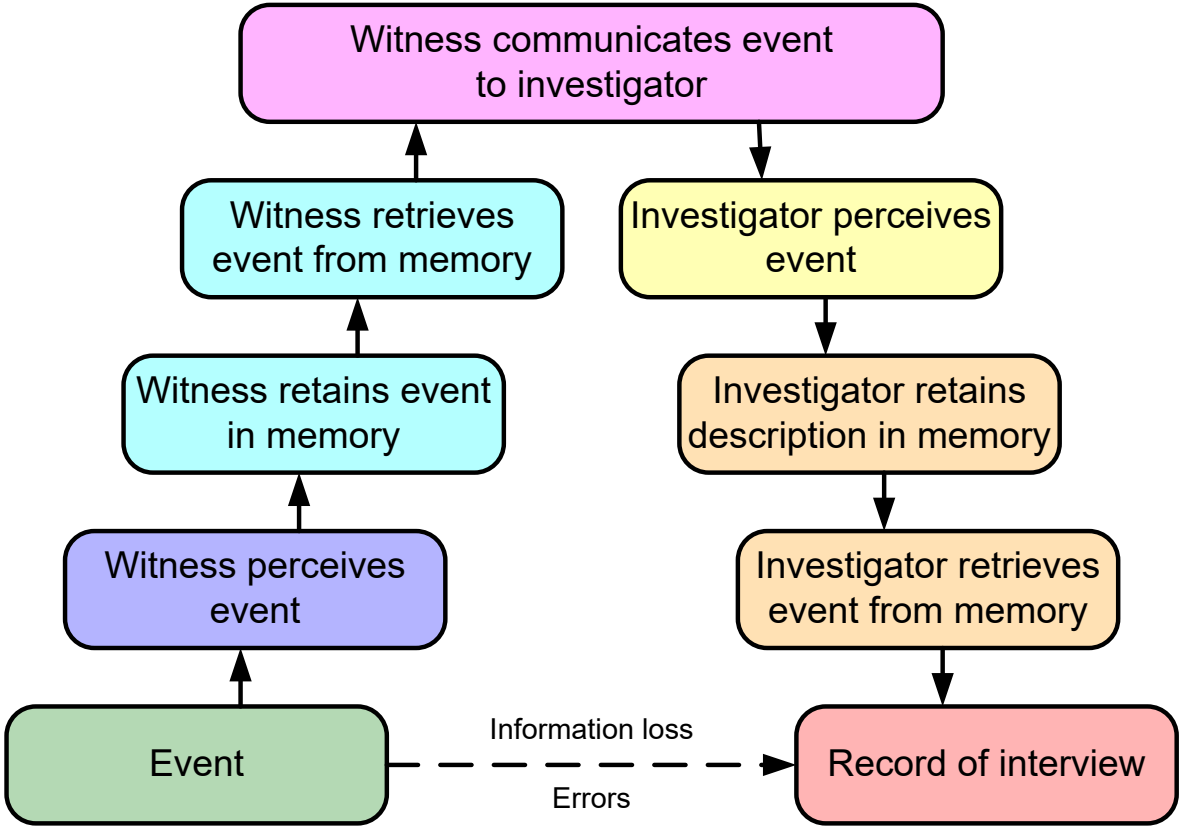
- Humans actively process information, we don't just passively receive, store, and retrieve information
  - we construct what we see

out

- we construct what we remember
  - Context and expectancy have big influence
  - Memory works by associations

Information flow

ATSB



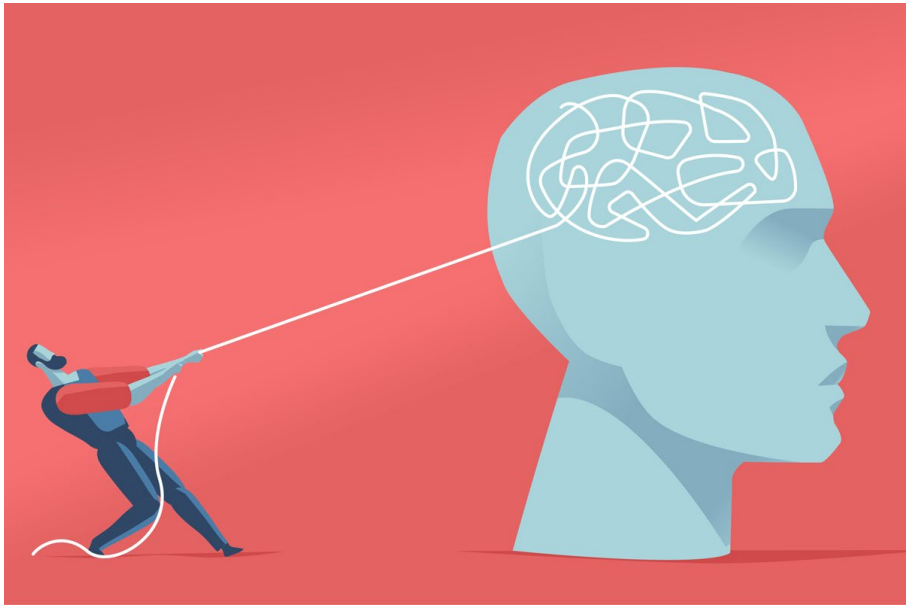
Reliability

- So are witnesses reliable?
- Several phases of interview process where information can be lost or distorted
- Witnesses are never 100% reliable
- BUT...good interviewing techniques will minimise distortions

Witness reliability

VIDEO 2
https://www.youtube.com/watch?v=x6fRH5MLBIU

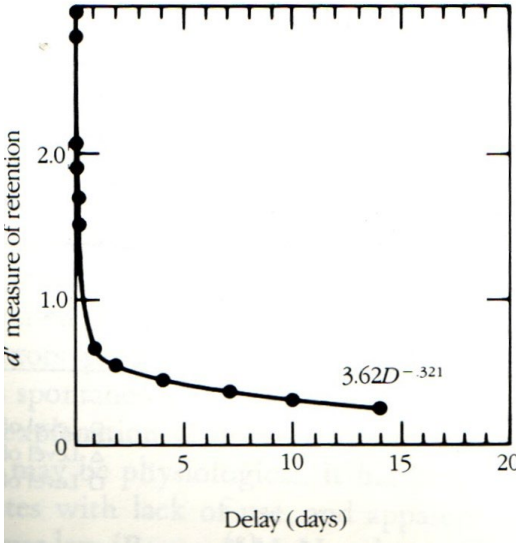
Some aspects of memory and communication to look out for during interviewing



How quickly do we forget details?

1) Does most forgetting tend to occur soon after an event?

YES



Confidence

1) Is a person's confidence in their memories a good predictor of the accuracy of those memories?

NO

- Some people are generally more confident than others, so when you do not know someone well, the level of confidence they display on a matter is almost meaningless
- However, a person’s confidence on one subject compared to the same person’s confidence on another subject can be a good predictor
- People who know very little about a topic will often be more confident than those who know their limitations of skill or knowledge

Can we trust what we are told?

2) Does eyewitness testimony reflect just what a witness originally saw and heard?

NO

- It also reflects other information obtained later on
- Memories change every time event is talked about, so crew debriefings media reports, leading questions from investigators, will all change people's memories in a way that they won't be able to distinguish from what they actually saw.
- Also just remembering changes your memory

Does more detail reflect better accuracy?

3) Does recollection of many detailed aspects of an event suggest those details have been remembered accurately?

NO

- Recalling details, especially of events that occurred some time ago, are often incorrect. Recalling detail probably increases their confidence though
- Just because a sequence of events seems logical, doesn't mean it is what actually happened, as seen when comparing multiple people's account of the same event. It may reflect that the person's memory has filled in gaps and changed sequences to make them make logical sense.
- However, a detailed account of a visual scene is an indicator of better reliability.

Does stress affect memory?

4) Does intense stress at the time of an event impair the accuracy of the memory of that event?

YES

- Stress (eg. I think I'm going to die) narrows focus of attention on what is perceived as important, blocking out peripheral information (tunnel vision)
- Stress reduces the sources of information a person samples from, and the frequency or amount of times the sources are checked
- Working memory capacity is reduced, so retention of memories will suffer

Do attitudes etc affect memory?

5) Can a person's attitudes and expectations affect their memory of an event?

YES

- It also affects perception of events
- Memories influenced by cultural biases and by subject matter expertise (can change memories to make the story make sense)

Attention

10) To what extent will people notice things they were directly looking at?

SOMETIMES

- Just because you are seeing something (physically) does not mean you are perceiving it – you mostly perceive what you are focused on
- Less likely to see unexpected road event when not totally focused on driving (mobile phone conversation)

Can we trust a child witness?

8) Do adults have better memories for events than children?

BETTER

- The level of detail recalled by children will be less than adults, but when asked the right questions, accuracy of this recall is about the same.
- So do not discount a child's witness account
- Children will often have less biases and preconceived assumptions that distort memories compared to adults. However, they are much more suggestible and easily influenced.

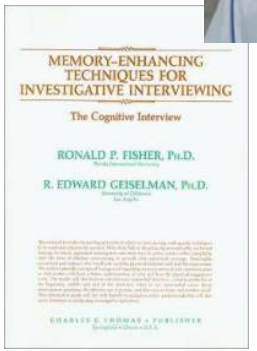
Cognitive interviewing approach

- ATSB use for all interviews

Cognitive interviewing

Underlying principle:

interview should be centred around the interviewee

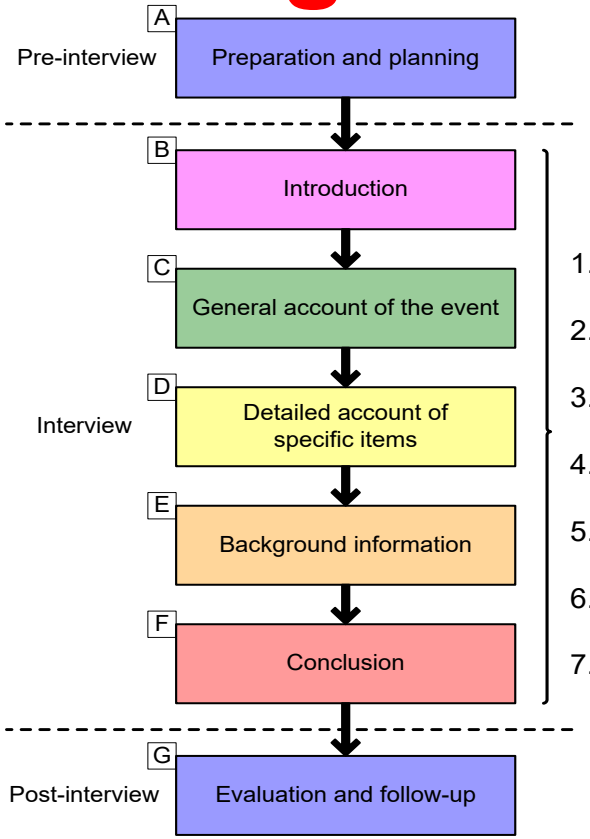


- Guided memory retrieval

General principles

- Develop and maintain good rapport
- Encourage interviewee to be actively involved
- Help the interviewee concentrate
- Use open, simple and unbiased questions
- Listen actively
- Use a communication style to suit the interviewee
- Work as a team with other interviewers

Interview stages



General principles

1. Develop and maintain good rapport
2. Encourage the interviewee to be actively involved
3. Help the interviewee concentrate
4. Use open, simple and unbiased questions
5. Listen actively
6. Use a communication style to suit the interviewee
7. Work as a team with other interviewers

Types of questions

Types of questions

Open versus closed

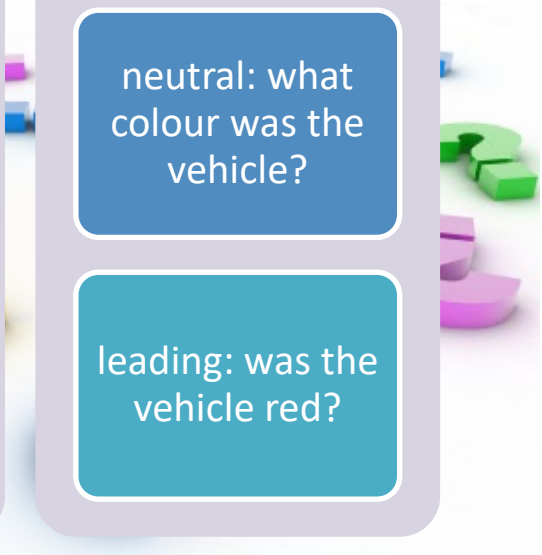
- open: what happened?
- closed: what colour was the vehicle?

Broad versus narrow

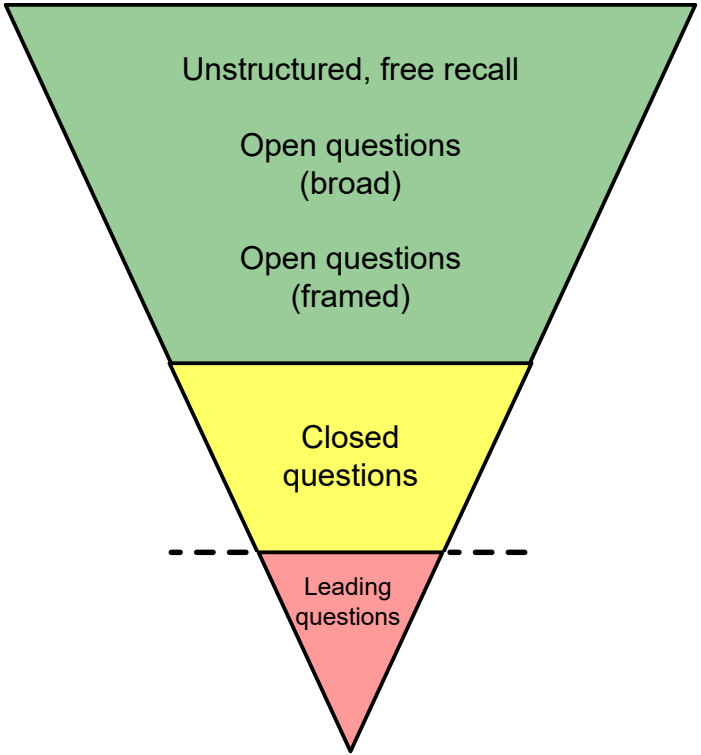
- broad: what happened?
- narrow / framed: what happened in the cab after the train stopped?

Neutral versus leading

- neutral: what colour was the vehicle?
- leading: was the vehicle red?



Hierarchy of questions



Unstructured free recall

- Use at start of interview
- Responses can vary in length
- Follow up with open questions
- Examples:
  - *What happened?*
  - *Tell me everything you can remember?*

Open questions

- Allow for an unlimited response in the interviewee's own words
- Cannot be answered with one or two words
- Encourage lengthy responses, open up discussion
- Information generally more accurate than from closed questions
- Start broad then move to narrow / framed

Open questions - examples

- *Tell me everything you can about the landing?*
- *Please describe what happened next?*
- *How would you describe your workload at that time?*
- *What can you tell me about the weather conditions?*

Closed questions

- Limit the amount or scope of information that interviewee can provide
- Can be answered with one or two words
- Used for completeness, filling in detail
- Information generally less accurate from closed questions

Closed questions examples

- *Exactly where were you standing?*
- *What speed was the train travelling at?*
- *How many people were on the platform at the time?*
- *What was the position of the landing gear?*

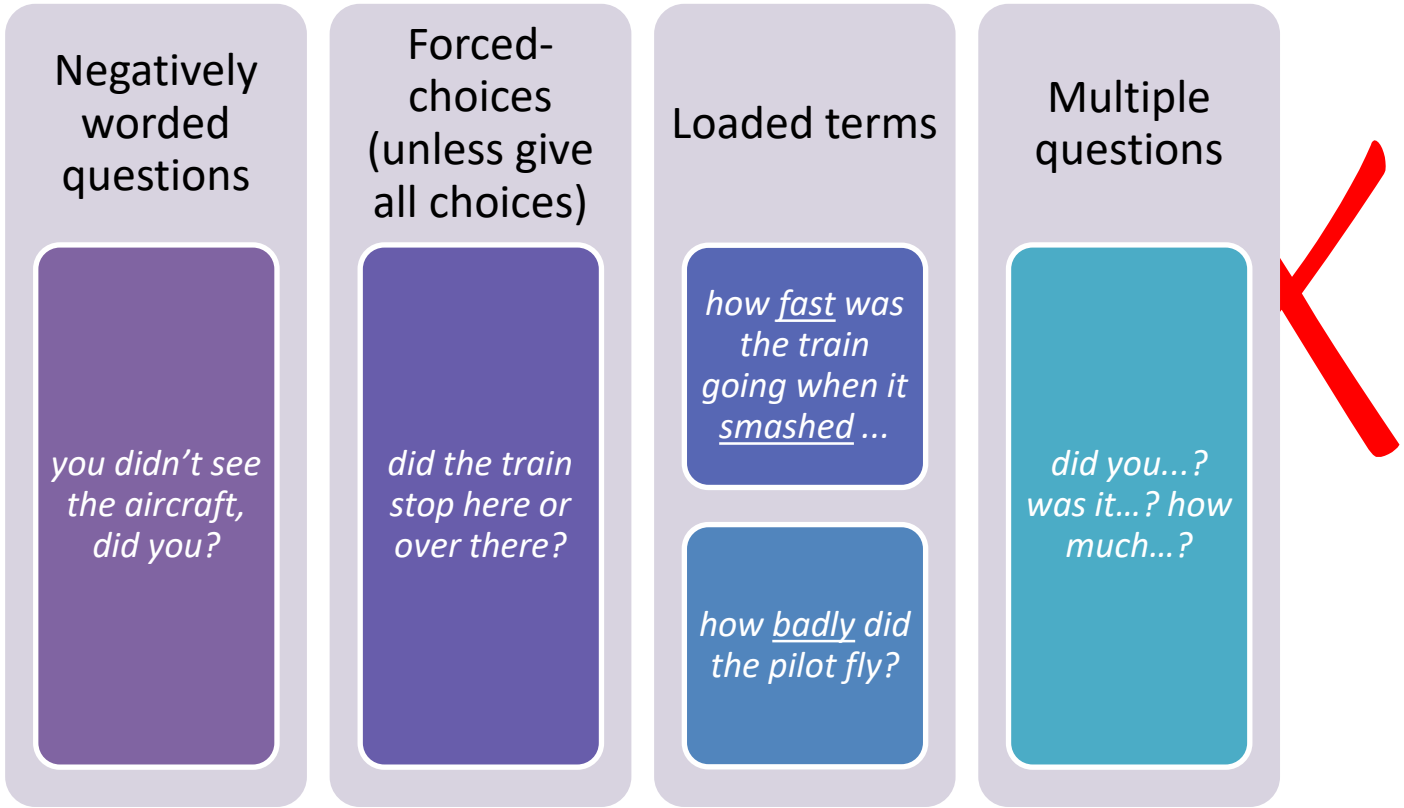
Leading questions

- Suggest an answer
- Can distort interviewee's memory
- Information generally less accurate than from non-leading questions
- Should only be used as a last resort, and answers should be interpreted with caution

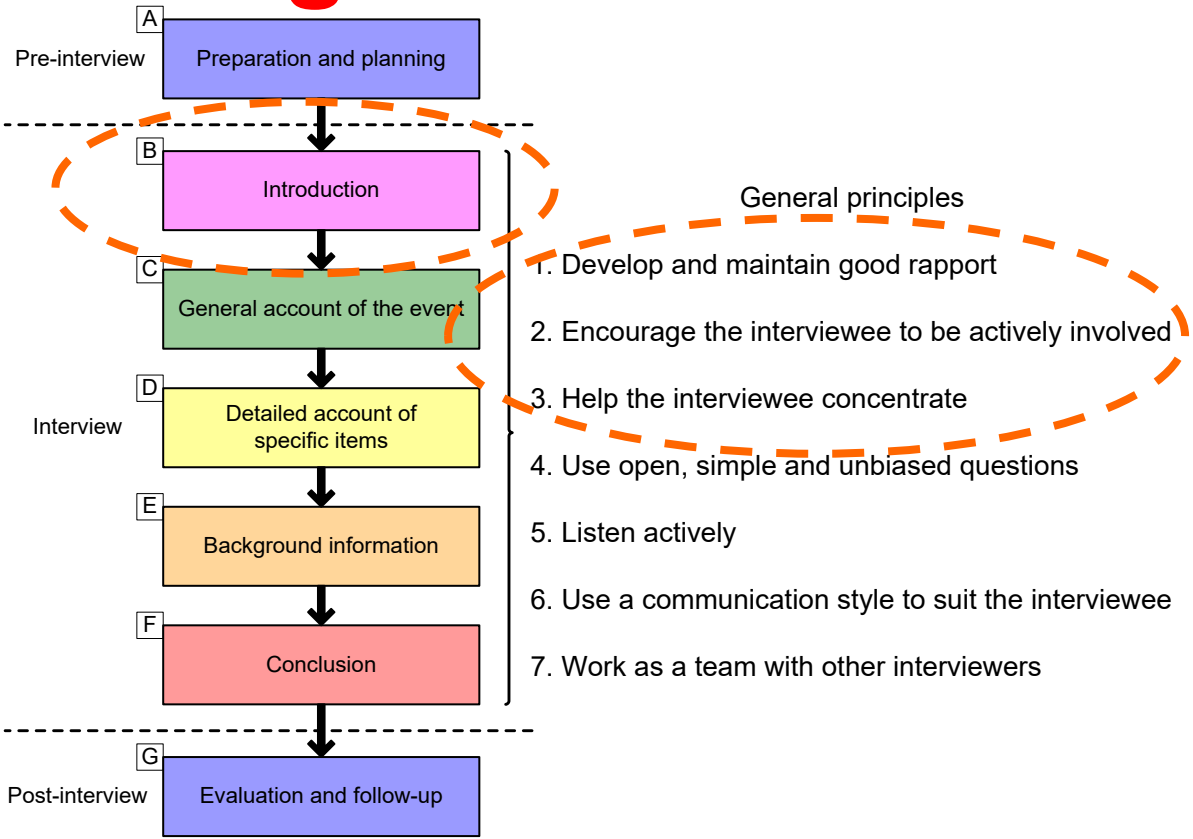
Leading questions examples

- *Was the left propeller turning?*
- *Was the aircraft on fire before it hit the ground?*
- *Was the engine noise really loud?*

Questions to avoid



Interview stages



Introduction

- Provide a positive greeting
  - Develop and maintain rapport
- Explain interview protocols
  - Try to separate from interview
- Discuss interview process
  - Encourage interviewee to be actively involved

Developing and maintaining rapport

- Provide positive greeting
  - Ask how they are feeling
  - Inquire as to their injury / personal status
- Try to view the situation from their perspective
- Treat interviewee's statements as truthful
- Be patient, calm, relaxed
- Maintain eye contact
- Introduce personal information about yourself

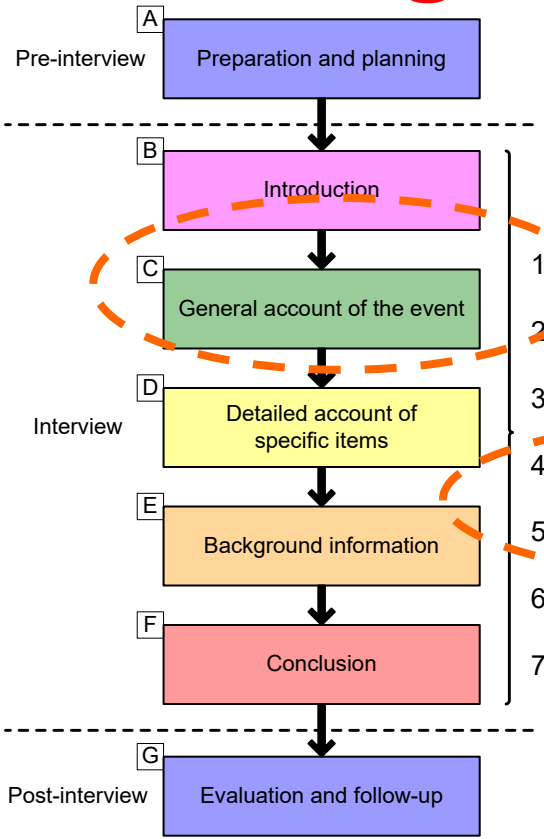
Interviewee is to be actively involved

- They are the one with the information and they will be doing most of the talking
- They should volunteer information whenever they think of it (not wait for a question)
- Tell things in their own words at their own pace
- Provide as much detail as possible (even if seems trivial or conflicts with something else)
- Don't guess or make up answers (okay if they do not know answer)

Help the interviewee concentrate

- Minimise distractions and disruptions
- Use instructions and questions that encourage concentration
- Active listening
- Ask questions on same topic before moving on to next topic
- If interviewee not concentrating, deal with issue straight away

Interview stages



General principles

1. Develop and maintain good rapport
2. Encourage the interviewee to be actively involved
3. Help the interviewee concentrate
4. Use open, simple and unbiased questions
5. Listen actively
6. Use a communication style to suit the interviewee
7. Work as a team with other interviewers

Active listening

- Don’t interrupt
- Use pauses
- Give feedback to indicate you are listening and understanding
  - nod head, say *‘uh huh …. okay ….’ (phone)*
- Maintain eye contact
- Lean forward
- Paraphrase in follow-up questions
  - *you said earlier that there were bright yellow flames … can you tell me more about that?*

Interview stages
General account

- Recreate the general context
  - Explicit instructions and/or questions on context

Recreating context (1)

- Witness example:
- *Before you start, I'd like you to take a few seconds and try to put yourself back in the same situation as when you witnessed the event. Think about where you were standing, what you were feeling, what the weather was like, who were you with at the time - try and get a really good picture in your mind. Don't say anything just yet, just think about the situation for a few seconds.*

Recreating context (2)

Involved person example:

- *What I'd like is for you to tell me the sequence of events as you perceived them. Start from wherever you think is relevant. Before starting, just try and put yourself back in the same situation. Don't say anything just yet, just think about the situation.*

Requesting general description

Simple instruction such as:

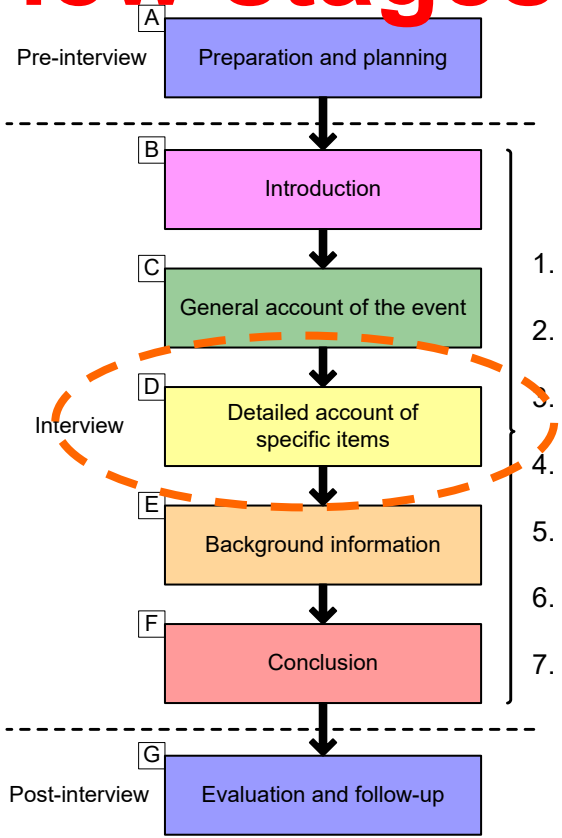
- *"Tell me in your own words whatever you can remember about the event from the time that…. Tell me everything you can in as much detail as possible."*

- *"Tell me everything you can remember, even the things you think are not important - even if you can not remember something completely. Everything that comes in to your mind, tell me at your own time and pace."*

Unstructured free recall – the general description

- Responses can vary in length
- Follow up with open questions
- Examples:
  - *What happened?*
  - *Tell me everything you can remember?*

Interview stages



General principles

1. Develop and maintain good rapport
2. Encourage the interviewee to be actively involved
3. Help the interviewee concentrate
4. Use open, simple and unbiased questions
5. Listen actively
6. Use a communication style to suit the interviewee
7. Work as a team with other interviewers

Obtaining detailed account

- (Develop probing strategy)
- Recreate specific context
- Request item description
- Probe item for further information
  - keep on topic
- Review your understanding
- Move on to next issue
- Pause before asking follow-up questions

Second (& third) recall of event

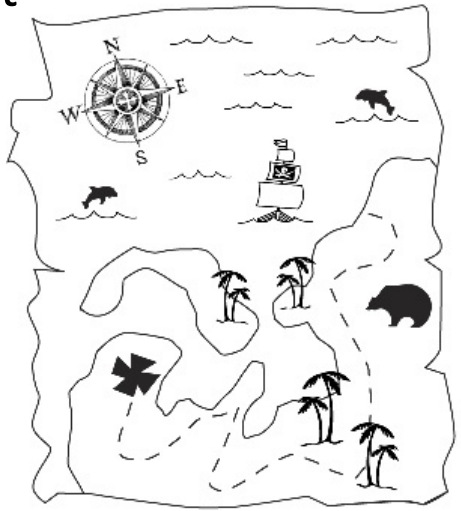
- Extracting more details → multiple recalls of parts or all of event
- Very important step (often missed) but always gets additional information

Extracting details in subsequent recalls

- Develop time line during first recall for follow-up
- For each time period (chunk), repeat back a fact and ask them to elaborate (give more detail)
- Go through each chunk as many times as needed before moving onto next chunk

Try different focus for each recall

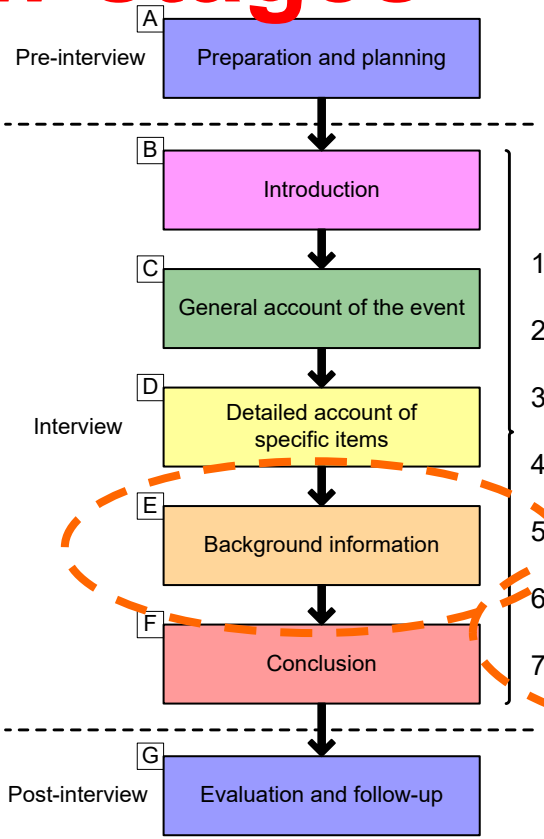
- Each time ask them to go through a different way
  - What were you doing,
  - describe communications,
  - what were you thinking,
  - use a model/chart/drawing, etc



Aim of subsequent recall technique

- Aim is to guide memory
- Remember – memories work by associations
- Best time to remember for details about an area is when witness is already thinking about that area
- (not jumping around topics not useful for memory recall)

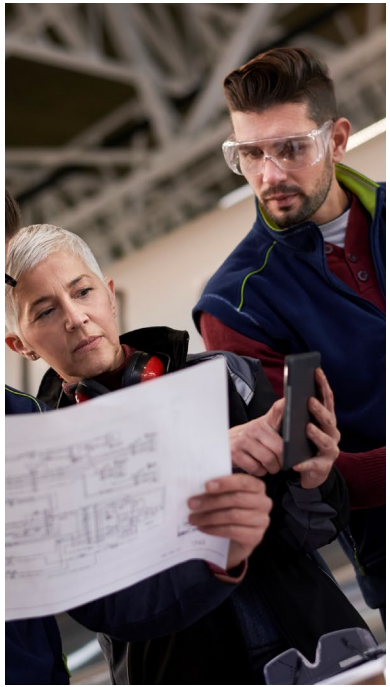
Interview stages



General principles

1. Develop and maintain good rapport
2. Encourage the interviewee to be actively involved
3. Help the interviewee concentrate
4. Use open, simple and unbiased questions
5. Listen actively
6. Use a communication style to suit the interviewee
7. Work as a team with other interviewers

Work as a team



- Ensure interviewers know their roles
- Interview leader should introduce other interviewer into conversation as required

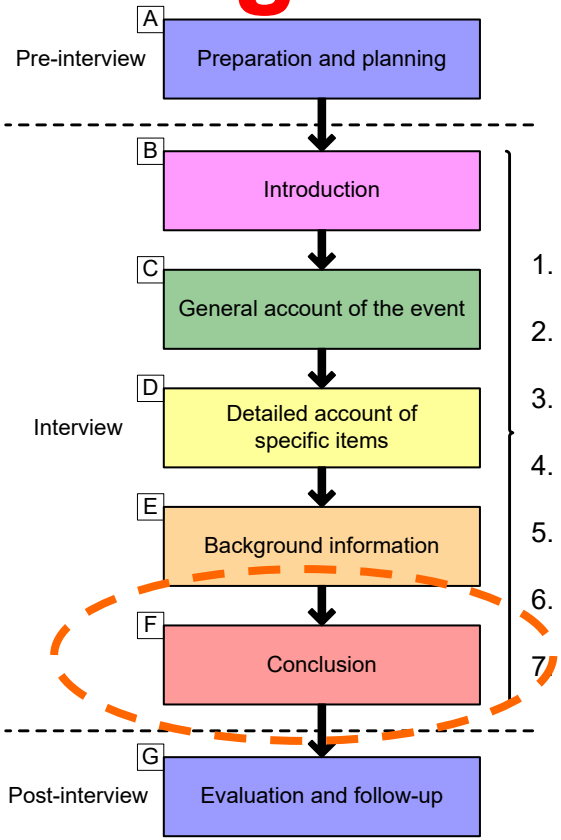
Work as a team

- Check with other interviewer before changing topic
  - "(Name), do you have any questions about (…) before we move on?"
- If other interviewer having difficulty, provide assistance
- Don't answer each other's questions!

Obtain background information

- Fatigue and sleep
  - Sleep opportunities
  - Sleep obtained
  - Alertness on duty
- Tasks and processes
- Risk controls and organisational influences
- Witness limitations
- Operational experience
- Personal and medical information
- Sources of further information

Interview stages



General principles

1. Develop and maintain good rapport
2. Encourage the interviewee to be actively involved
3. Help the interviewee concentrate
4. Use open, simple and unbiased questions
5. Listen actively
6. Use a communication style to suit the interviewee
7. Work as a team with other interviewers

Conclusion

- Clarify any discrepancies
- Review interview plan
- Complete administrative requirements
- Do they have any questions?
- Provide information – copy of recording, ATSB investigation/report process
- May need follow up – inform them and get contact information
- Provide positive ending

QUESTIONS