



bushfire&natural
HAZARDSCRC

INCIDENTS – DECISION MAKING IN TEAMS

Dr. Christine Owen

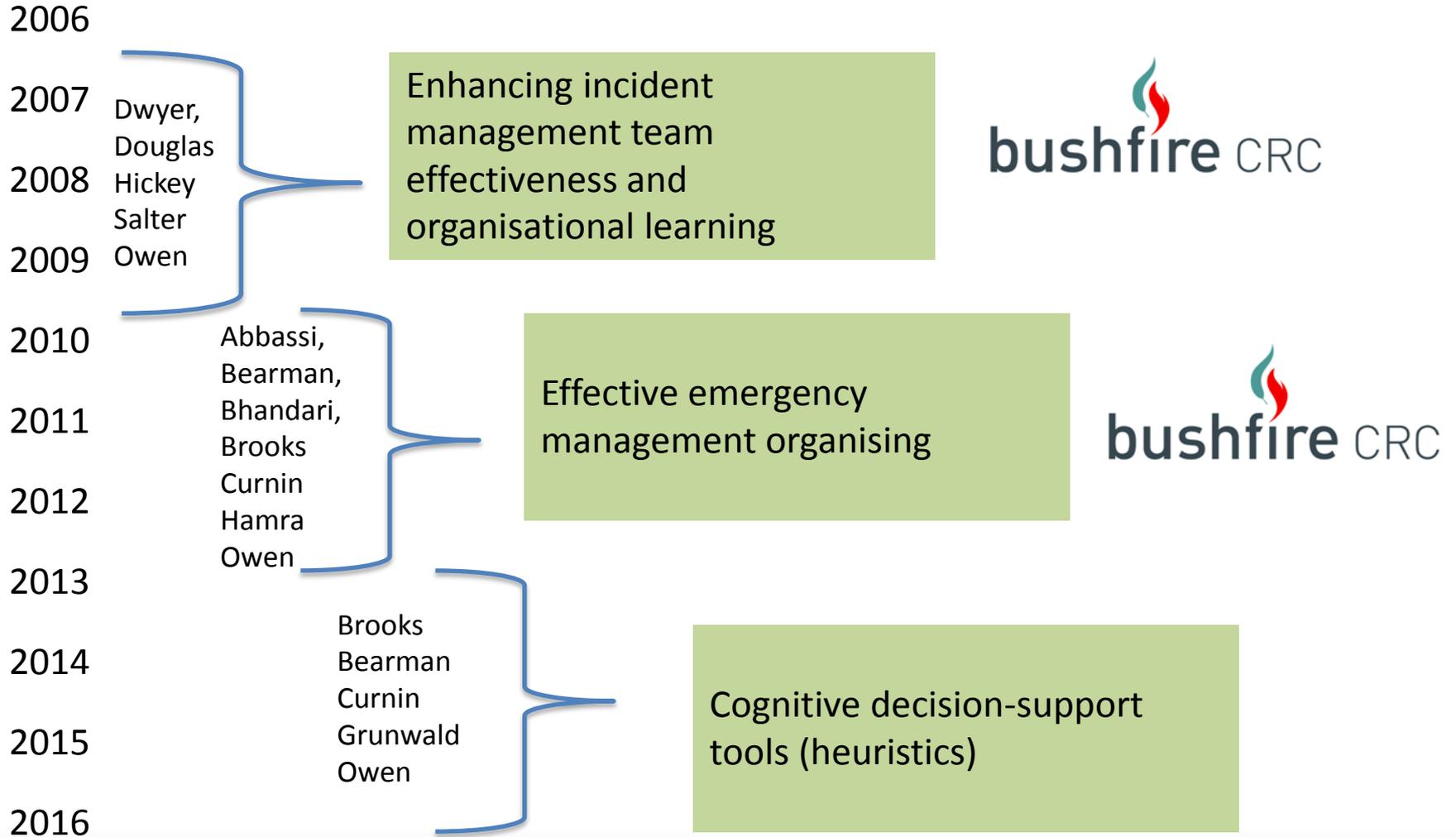
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An Australian Government Initiative



RESEARCH – LEGACY AND CONTINUITY



TEAM RESEARCH METHODS

- Interviews experienced personnel (N=115)
- Observations planned (n=18) and unplanned incidents (n=6)
 - 25.4 hours of sampled video data
 - 10,449 video-coded clips
 - 19 hours audio transcriptions
 - 265 teamwork effectiveness surveys
- National Survey AIIMS/CIMS (n=870 responses) 25 agencies



Planned incidents

- Training simulations
Tas, Vic, NSW, ACT,
Qld

Unplanned incidents

- Fires in Victoria and
Tasmani

Cam 1



Cam 2



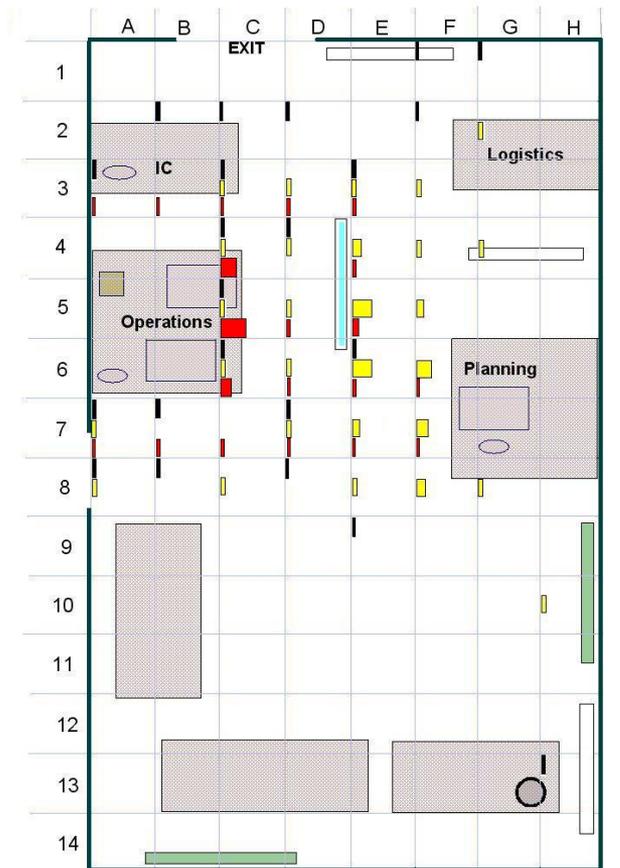
Cam 3



USE OF WORK SPACE AND TECHNOLOGIES



INTRODUCING NEW TECHNOLOGIES – IMPLICATIONS FOR WORK PRACTICE



IMT TRAINING VIC#3 ■ INCIDENT CONTROLLER ■ PLANNING OFFICER ■ OPERATIONS OFFICER



Incident Commander's Incident Register (Print)

Fire Log

| ID | Date/Time | Location | Originating Officer | Channel | Priority | Message |
|-----|------------------|---------------|---------------------|---------|----------|--|
| 032 | 15.51 19/11/2006 | To Operations | WSP | 03 | Message | Officers are to go to Fire Protection Unit and load Protection |
| 033 | 15.52 19/11/2006 | To Operations | WSP | 03 | Message | Substation Transfer to return to Street (Staged) prior to Hydrant. To get cleaned up. When cleaned up there are to be repositioned |
| 034 | 15.59 19/11/2006 | To Operations | Ops | 03 | Message | Review a CT with Hydrant Division #24 to conduct asset protection of properties on Leandra Street/Rowland road at the intersection and Address 21 to be used |
| 035 | 15.54 19/11/2006 | To Operations | Incident Commander | 03 | Message | Incident Commander on Leandra Street 600 641 000 on siteground awaiting instructions to get cleaned up at a suitable location |
| 036 | 15.43 19/11/2006 | To Operations | WSP | 03 | Message | IC of crew that got water bombed and do they require assistance |
| 037 | 15.39 19/11/2006 | To Operations | WSP | 03 | Message | Incident commander above plan address 4 A0 0438 3041 |
| 038 | 15.38 19/11/2006 | WSP | Operations | 03 | Message | ProTech to check status of fire and advise a staff assigned to reflective hot corners are maintained for to check |
| 039 | 15.36 19/11/2006 | To Operations | Incident Commander | 03 | Message | Incident commander above plan address 4 A0 0438 3041 |



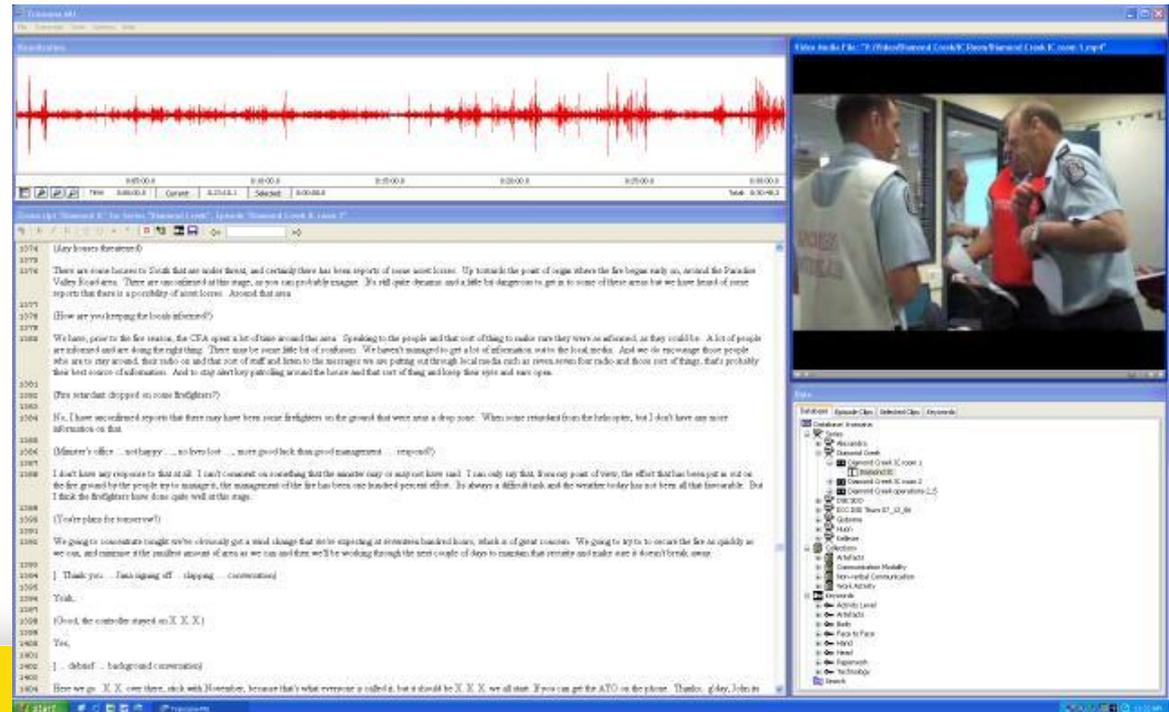




RESEARCH – OBSERVATIONAL METHODS



After



3374 Many lovers (stammering)

3375 There are some houses in South that are under threat, and certainly there has been reports of some small fires. Up towards the point of origin where the fire began early on, outside the Park Lane Valley Road area. There are operations at this stage, as you can probably imagine. It's still quite dramatic and a little bit dangerous to get in to some of these areas but we have heard of your reports that there is a possibility of some losses. Around that area.

3376 (How are you keeping for the local incident?)

3377 We have, prior to the fire starting, the CFA open a lot of time around the area. Speaking to the people and that sort of thing to make sure they were as advised, as they could be. A lot of people are advised and are doing everything. There may be some little bit of confusion. We have managed to get a lot of information on the local roads. And we do encourage those people who are to stay around, that radio on and that sort of staff and listen to the message we are putting out through local radio such as seven seven four radio and those sort of things, that's probably the best source of information. And to stay away from parking around the houses and that sort of thing and keep those eyes and ears open.

3378 (Fire retardant dropped on some firefighters?)

3379 No, I have secondary reports that there may have been some firefighters on the ground that were when a drop zone. When some retardant from the helicopter, but I don't have any more information on that.

3380 (Minister's office - not happy... not lost... more good luck than good management... response?)

3381 I don't have any response to that at all. I can't comment on anything that the minister may or may not have said. I can only say that, from my point of view, the effort that has been put in and on the fire ground by the people who try to manage it, the management of the fire has been one hundred percent effort. It's always a difficult task and the weather today has not been all that favorable. But I think the firefighters have done quite well at this stage.

3382 (You're pleased for tomorrow?)

3383 We going to concentrate tonight we've obviously got a good change that we're expecting at tomorrow based on the, which is of great concern. We going to try to contain the fire as quickly as we can, and tomorrow if the weather aspect of area as we can and then we'll be working through the next couple of days to make sure that retardant and make sure it doesn't break away.

3384 I Thank you... finishing off... sleeping... commented

3385 Yeah.

3386 (I think the controller stayed on X X X)

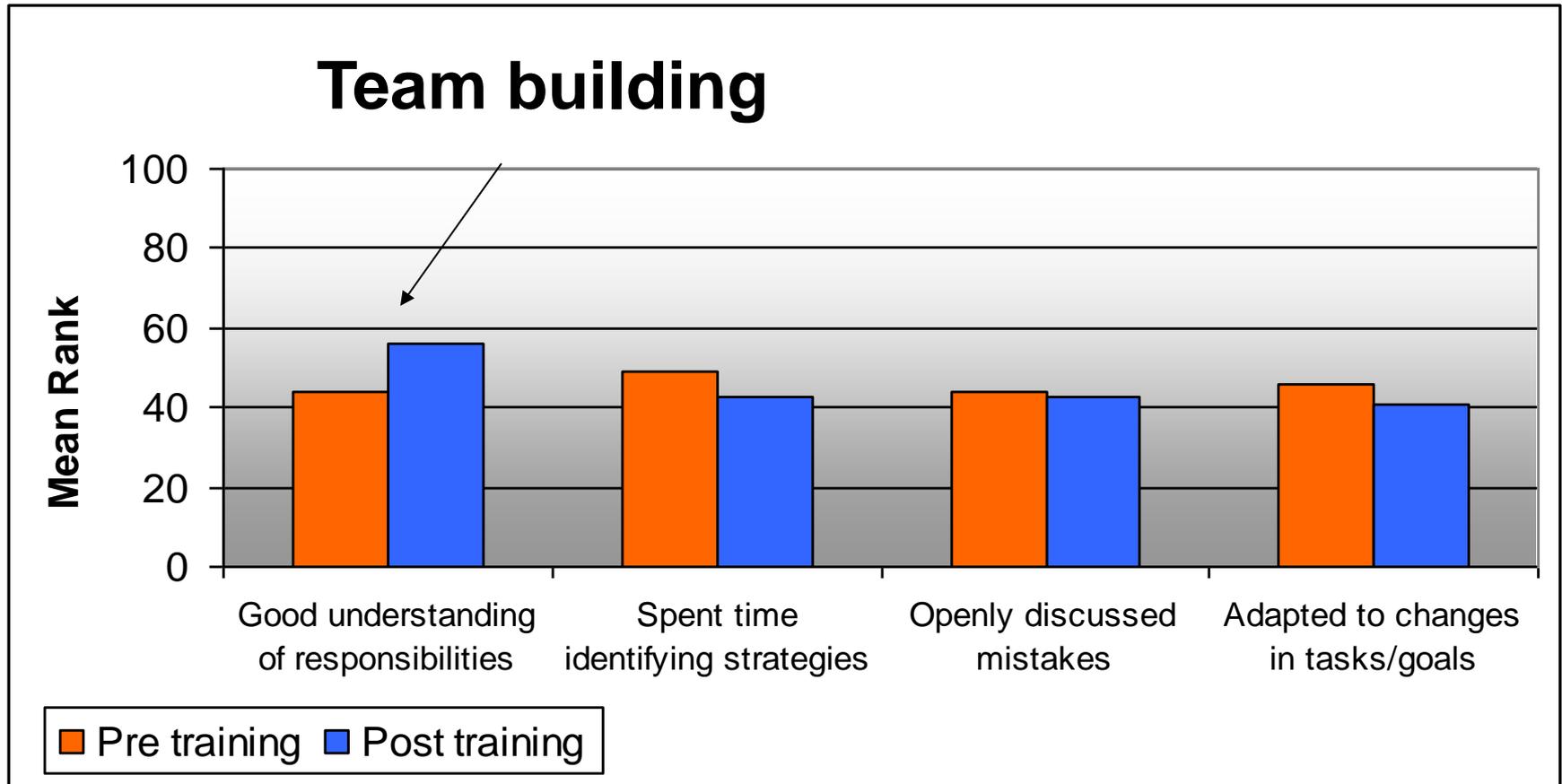
3387 Yes.

3388 I - debrief - background conversation

3389 Here we go X X X over there, stick with Houston, because that's what everyone is called, but it should be X X X, we all start. If you can get the ATO on the phone. Thank you, John

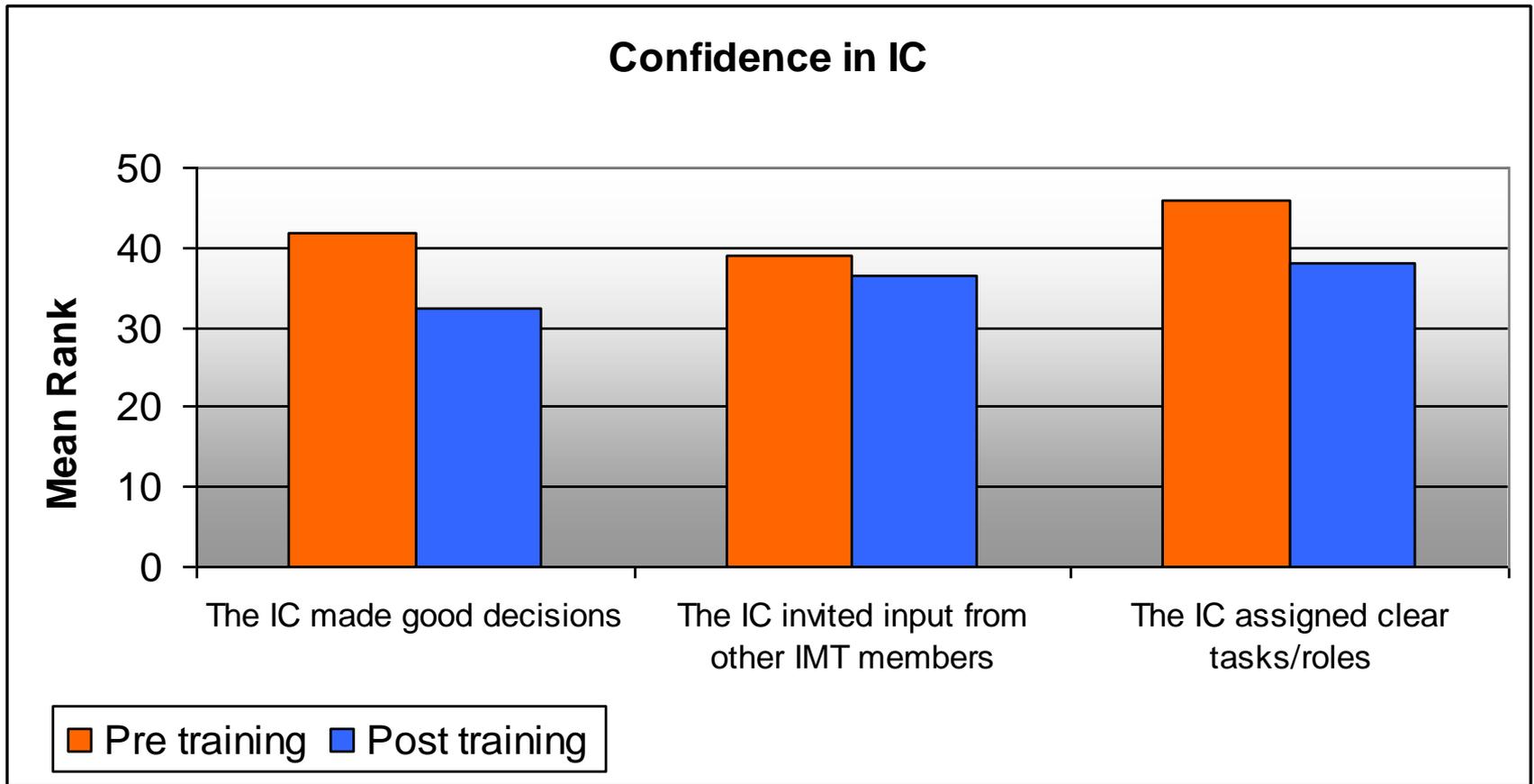
Before

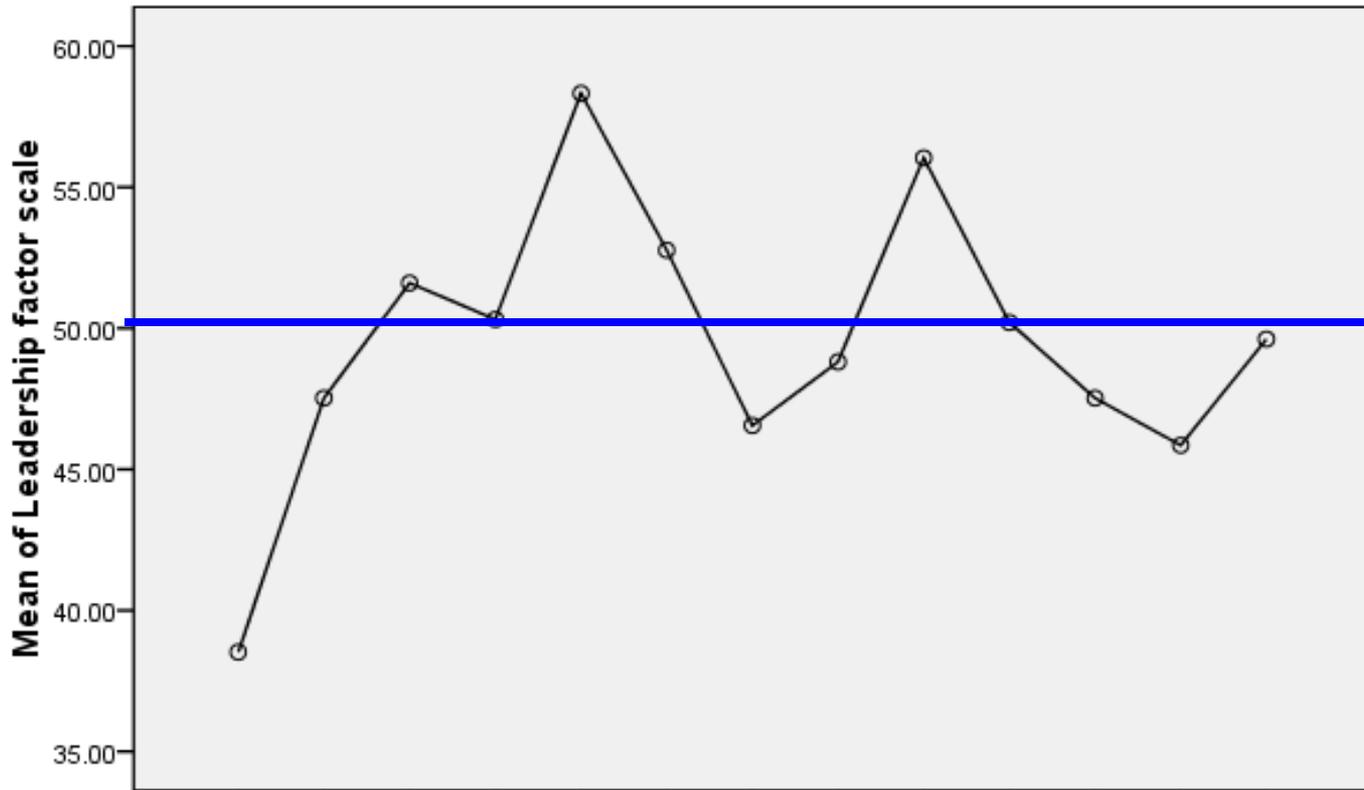
RESEARCH – PRE-POST OBSERVATIONS SURVEY



18 Team simulations, 240 participants, 5 states

PERCEPTIONS OF TEAM LEADERS BY THEIR PEERS





Incident Controller x location

HIGHER PERFORMING TEAMS “I HEAR YOU”

Effective teams

- more explicit confirming statements;
- checking out assumptions



Detecting gaps and inconsistencies: Team members **actively** look for and fill gaps in the team’s information base to identify and manage **inconsistencies** or contradictions

HIGHER PERFORMING TEAMS “I HEAR YOU”

Low performing teams

“It’s all good to go”

“ Great”



High performing teams

“It’s all good to go”

“ So you’re fully loaded and you’ll be there by ...”

HIGHER PERFORMING TEAMS “I SEE YOU”

- Shared observations
- Active noticing
- Climate
 - Seeking assistance
 - Accepting assistance
 - Offering assistance
- Brokering assistance



**“they’ll do that but you
need to spell out xxx”**

HIGHER PERFORMING TEAMS “I GET YOU”

Low performing

“Are you ready for the teleconference?”

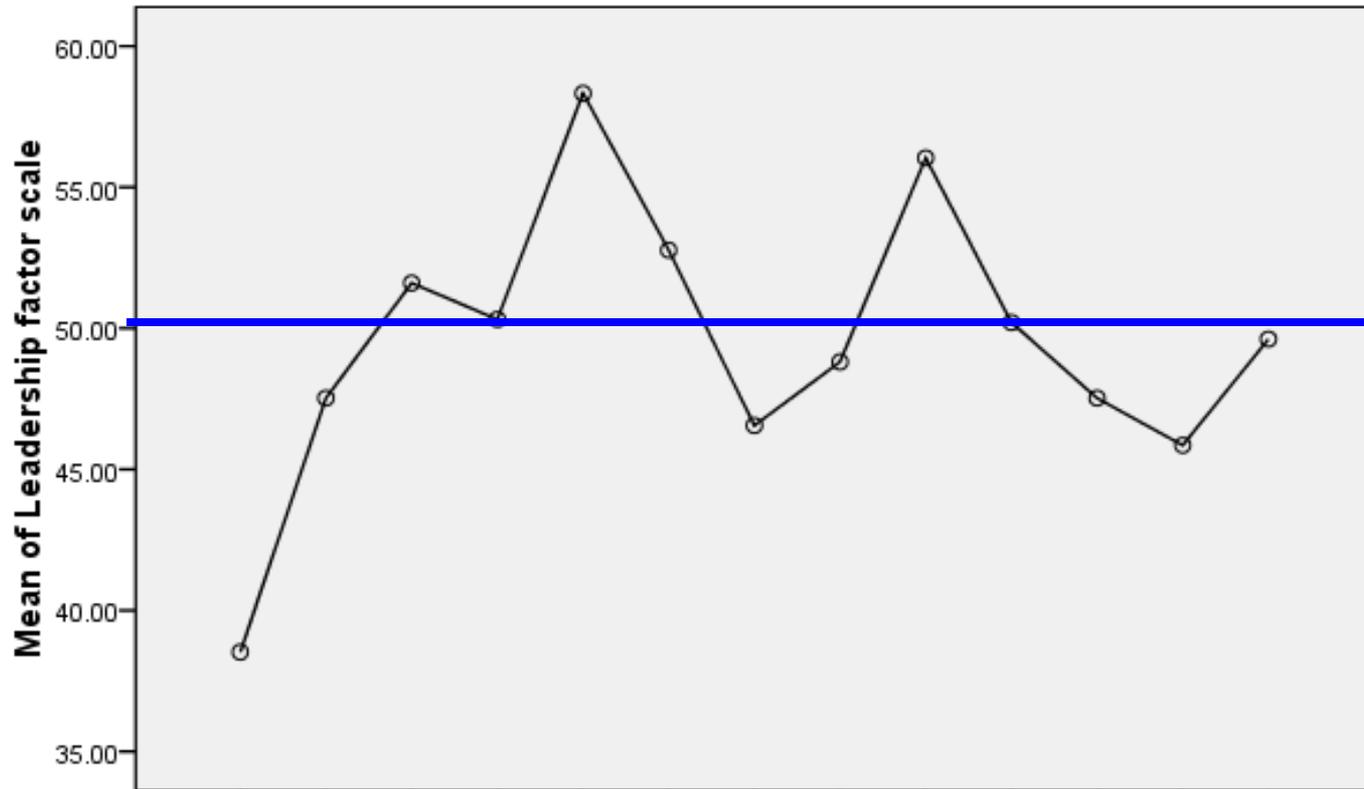
“Yeah”



High performing

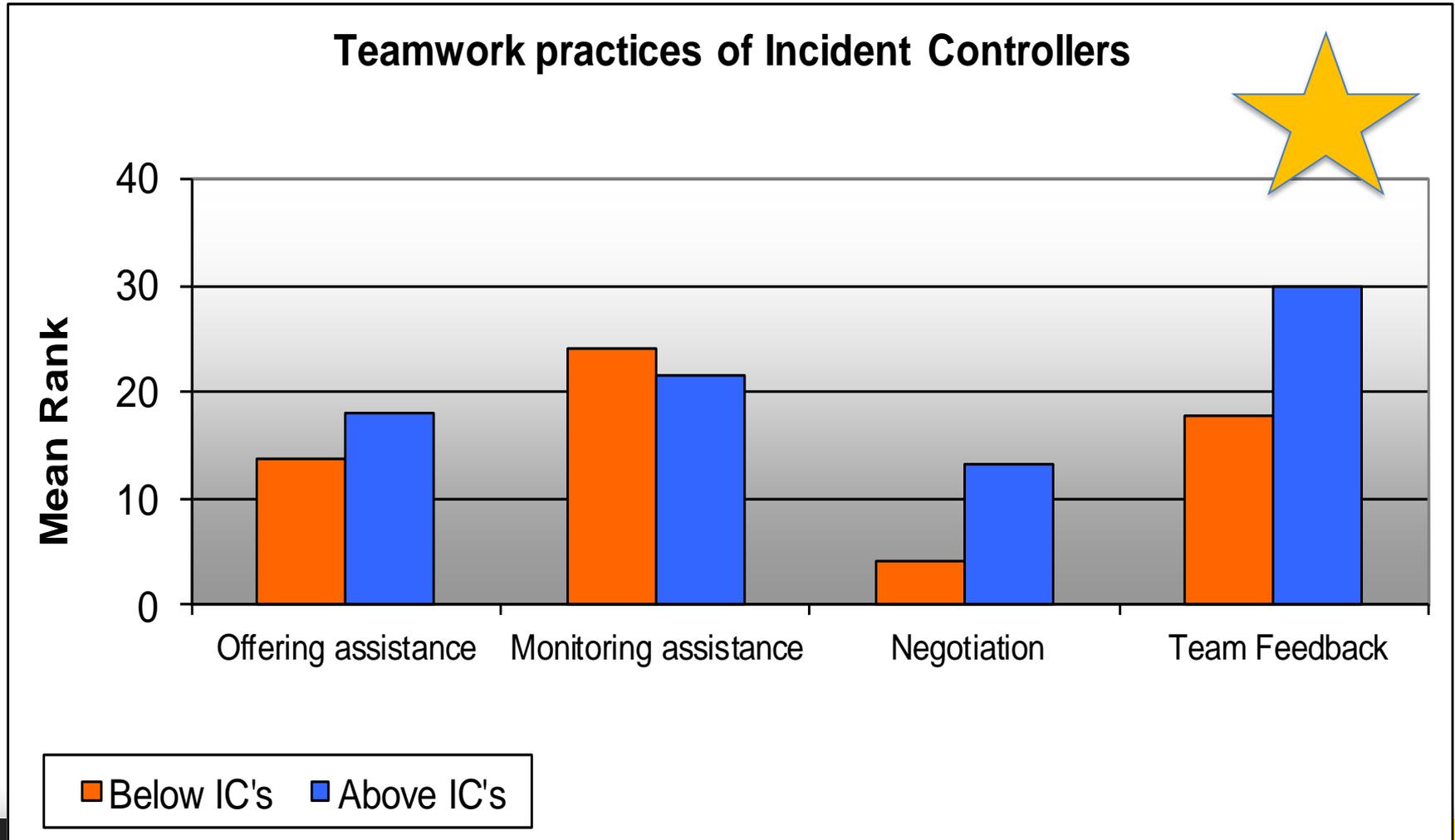
“this [teleconference] is going to be intense – you need to be ready for that”

WHAT WERE EFFECTIVE TEAM LEADERS DOING?

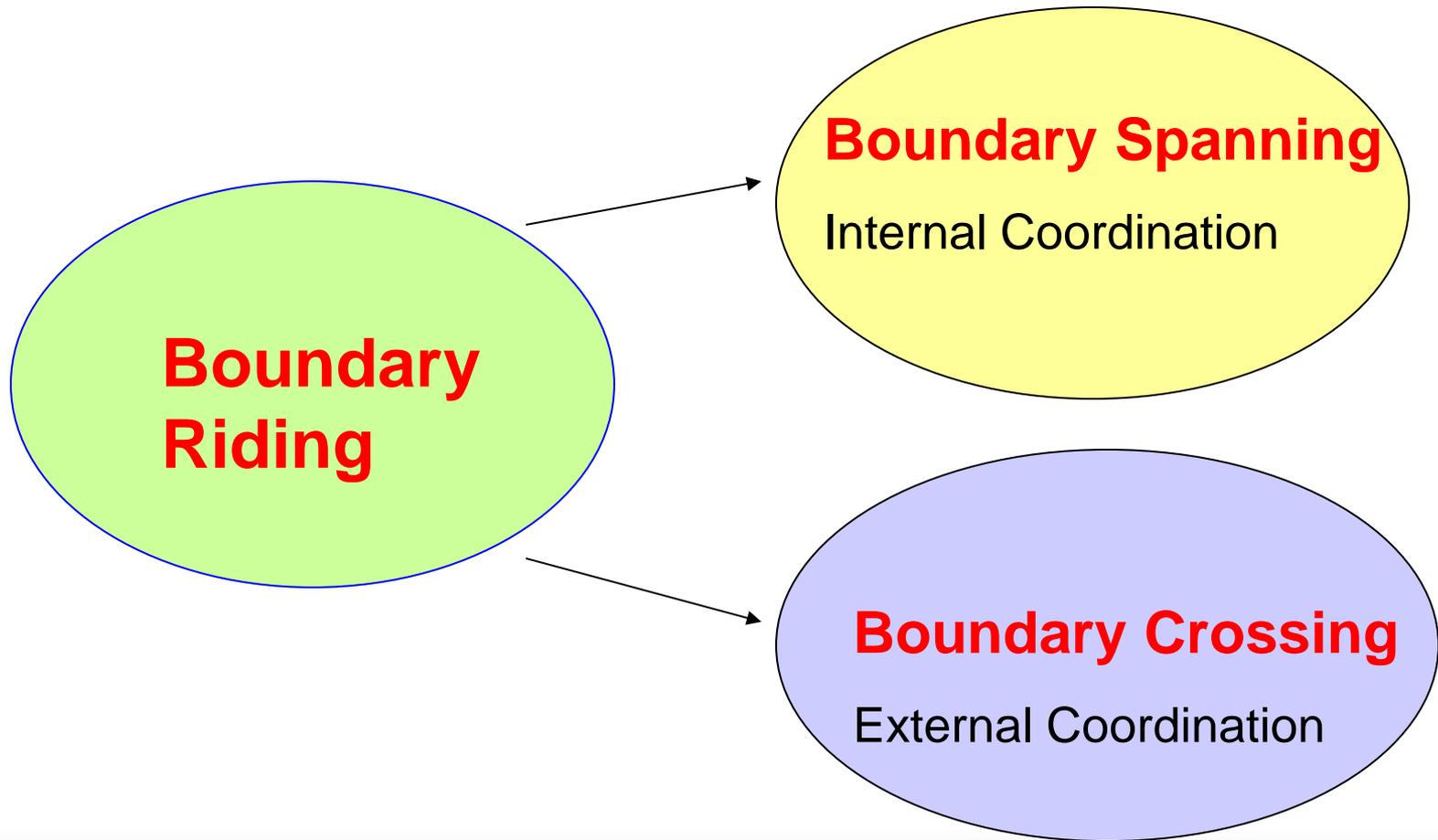


Incident Controller x location

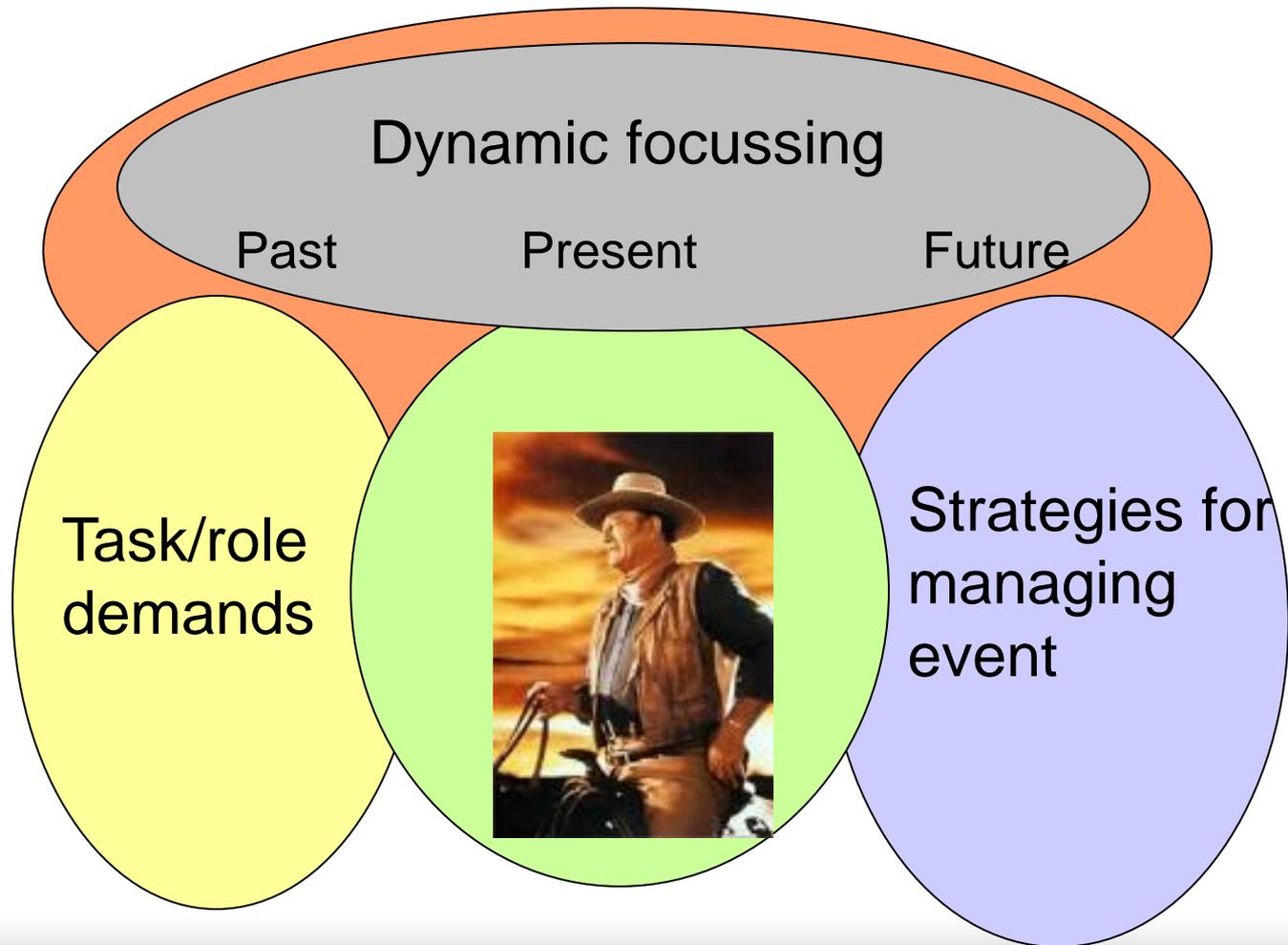
EFFECTIVE LEADERS – TEAM FEEDBACK



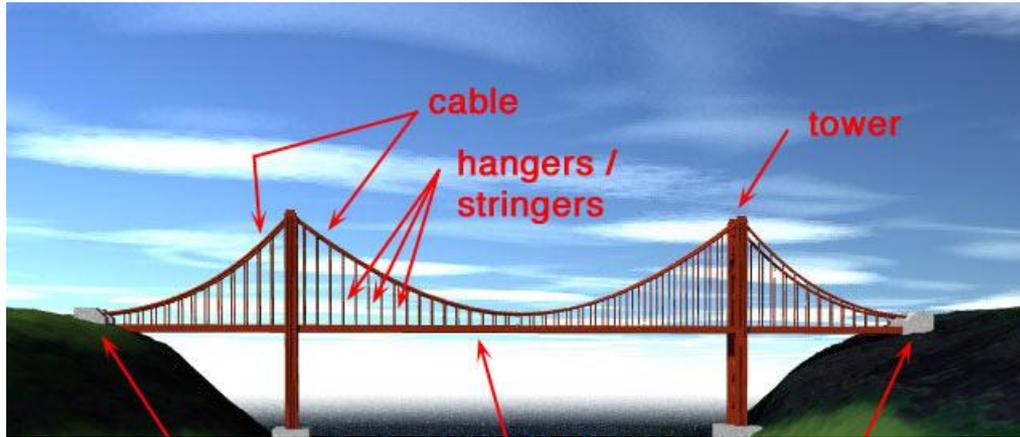
EFFECTIVE LEADERS – TEAM FEEDBACK



EFFECTIVE LEADERSHIP: BOUNDARY RIDING



EFFECTIVE LEADERSHIP - BOUNDARY SPANNING



EFFECTIVE LEADERSHIP – CROSSING BOUNDARIES BETWEEN AGENCIES



BUT WHAT OF THE POORER PERFORMING TEAM LEADERS?

Implications for fire and emergency services
culture.... Some cultural archetypes

CULTURAL ARCHETYPE – THE BULLDOG: AN AUTOCRATIC LEADERSHIP STYLE



BULLDOG COMMUNICATION CLIMATES

Team Members:

- **Inhibition:** may feel inhibited in contributing information but instead only offer *information that is already shared*
- **Decision-making climate (hostility):** There may be lack of cooperation; trust; *withholding of information*
- **Power-distance:** less likely to speak up

CULTURAL ARCHETYPE: THE STRONG AND SILENT TYPE



CULTURAL ARCHETYPE: THE STRONG AND SILENT TYPE

Self-reflections: Incident Controller Simulation

(Phase 3 observations)

| bushfire CRC | | | |
|--|-------|---------------------------|--|
| IC <input checked="" type="checkbox"/> Ops <input checked="" type="checkbox"/> Planner <input type="checkbox"/> Logistics <input type="checkbox"/> | | | |
| Time | Level | Words (3) | |
| 9:30 | 4 | Calm / Released Happy. | |

Til

CULTURAL ARCHETYPE: THE STRONG AND SILENT TYPE

“It is important that a leader has credibility with those he/she seeks to lead and that they have confidence and trust in the leader’s capacity to do what is needed to be done.”

“One way that such confidence could be facilitated is by the use of body language.”

CULTURAL ARCHETYPE: THE STRONG AND SILENT TYPE

“When I have been in command at an incident

I would adopt a pose which was designed and intended to convey my capacity as a confident and capable leader

CULTURAL ARCHETYPE: THE STRONG AND SILENT TYPE

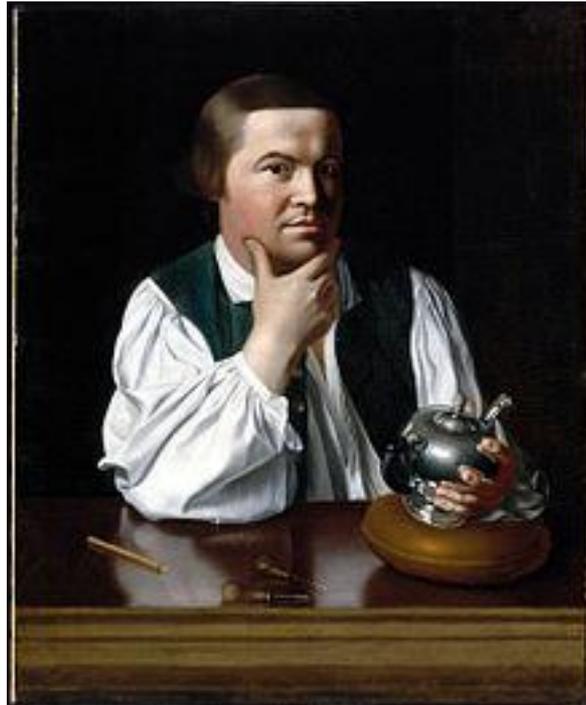
“When I have been in command at an incident I place one hand across my chest while I use the other to stroke my chin. And I stand very still.”

CULTURAL ARCHETYPE: THE STRONG AND SILENT TYPE

“I place one hand across my chest while I use the other to stroke my chin. And I stand very still.”



PAUL REVERE; “THE BRITISH ARE COMING”



ABRAHAM LINCOLN



MAGGIE THATCHER- THE IRON LADY



IMPLICATIONS – THE STRONG AND SILENT TYPE

Team Members:

- **Failure to challenge/test assumptions:** *assume* they share similar goals, leading to false consensus and collective ignorance
- **Poor communication/shared experiences:** may be thinking along similar lines but still be incorrect. Assumptions made about *sharing meaning* (e.g. Risk, threat, likelihood)
- **Power-distance:** remote or withdrawn leader

SCENARIOS: WHEN THINGS GO BAD



“FIGURED WORLDS” = “WHAT YOU WANT”



Visionary leadership combination:

Red Adair meets Luke Skywalker

“REALITY BITES” WHAT YOU GET

The bulldog



Bulldogs barking or aura of calm
impression management

The strong and silent
type



Implications from other industries – graded warnings



Lowering the authority gradient

Graded Warnings in Health Care

| Levels | Messages |
|-----------------------------------|---|
| 1 Probe/ Non-verbal behaviour | “I messages” I notice that ... Are you sure ...? |
| 2 Alert /offer alternatives | Would you like me to help with ... Shall we check ...? |
| 3 Challenge/ask for clarification | Is there a reason you’re going to ... I think actually.... I’m concerned about... |
| 4 Emergency Action | You must listen! We need to I’m not going to because ... |

"AN AWKWARD MOMENT"



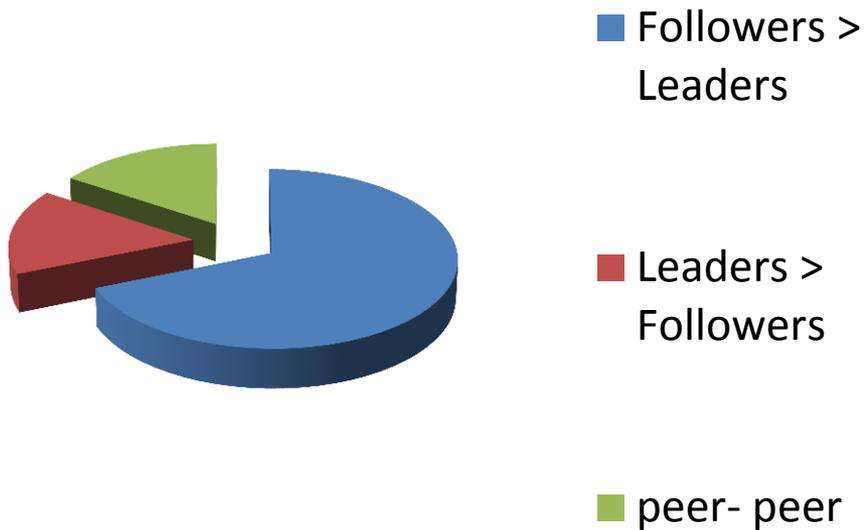
An awkward moment.
Saying one thing but thinking another.

| Levels | Messages |
|---------------------------------|--|
| Probe/ Non-verbal behaviour | Shows IC/ops Predictive map Open window |
| Alert /offer alternatives | What are our contingencies boss? |
| Challenge/ask for clarification | What do you mean its too hard? |
| Emergency Action/Intervention | We need to move the ICC now! |

ANALYSIS OF GRADED WARNINGS

18 human factors workshops (fire and non-fire)

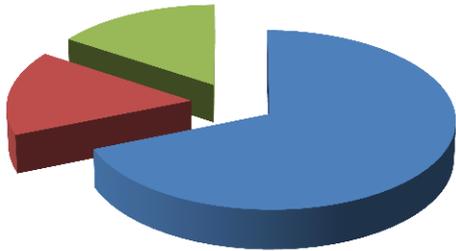
- Small group exercises; 25 “awkward moments



ANALYSIS OF COMMUNICATIONS EXERCISE

18 human factors workshops (fire and non-fire)

- Small group exercises; 25 “awkward moments

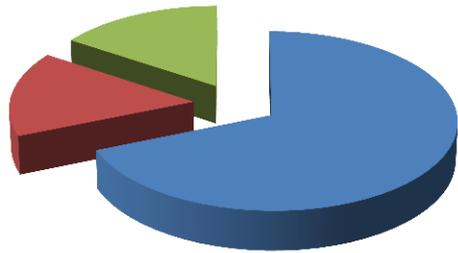


Leaders to followers

*ATTEMPTING TO GET FOLLOWERS
TO ACT*

ANALYSIS OF COMMUNICATIONS EXERCISE

18 human factors workshops (fire and non-fire)
- Small group exercises; 25 “awkward moments”



■ Followers > Leaders

■ Leaders > Followers

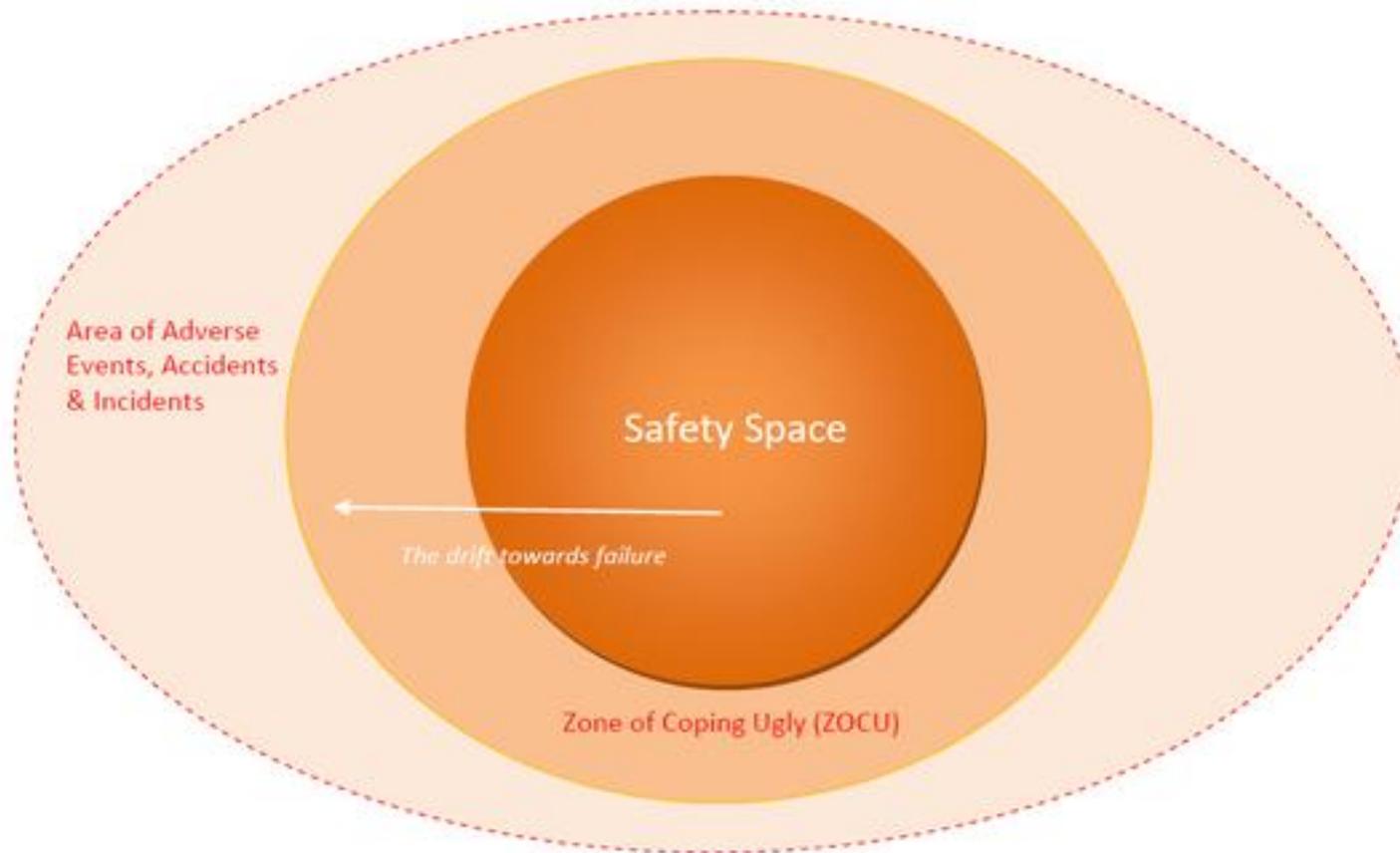
■ peer- peer

Followers to leaders

>> Mostly trying to get the leader to STOP and take notice

- In half the cases challenge still not explicitly raising concern

ZONE OF 'COPING UGLY'



Ben Brooks, Bushfire CRC

IMPLICATIONS FOR COMMUNICATION BETWEEN LAYERS?

1. Problem detection (situation assessment) assessment; risk



2. Task execution- mobilising resources



3. Anticipation planning prediction



4. Interpretation; consequence management

5. Evaluation/risk /assurance

**Capturing fire-ground lessons that
can be learned**



2ND FIELD RIDE : 9TH-10TH JULY 2013



LEARNING FROM ADVERSITY ... IT HAPPENS, JUST GET OVER IT?

We talk about field rides, staff rides, and lessons learnt, but how do we achieve real and lasting change in our organisations, and how do we learn from adversity in a manner which builds people up, rather than tear them down? While the fires were still burning in January 2013, senior staff within the Tasmania Fire Service recognised the significance of the out-of-scale event, and wanted to both learn from adversity and ensure those involved were cared for appropriately.

HOW DID WE DO IT?

1. Conducted a Field Ride with key crew leaders and decision makers who were directly involved on the Dunalley fire-ground during January 2013, in order to reflect and draw out lessons from that experience, and to identify potential learning opportunities for others.
2. The first step was critical to help those on the ground make sense of their experience and unpack what they had been through.
3. Those involved in the first step were asked if they were willing to share their stories with others.



WHAT IS A FIELD RIDE?

1. The design of *The Ride* drew from the processes and format of the "Staff Ride". A highly regarded program used by the Wildfire Lessons Learnt organization in the USA (Sutton & Cook, 2003) and recently trialed in Australia by the Parks and Wildlife Service, Tasmania (PWS) at Narawntapu and the Department of Sustainability and Environment, Victoria (DSE) at Cobaw.
2. It is a highly experiential and immersive learning program which revisits the ground of an incident and enables a walk through of what happened.
3. We called it a Field Ride because we wanted to include career staff and volunteer members.

Table 1—Priorities

WHEN BUSHFIRES ARE BURNING OUT OF CONTROL – REMEMBER OUR PRIORITIES!

1. Issue warnings
2. Protect vulnerable people
3. Protect valuable community assets
4. Stop building to building ignitions
5. Protect other community assets
6. Focus on firefighting once conditions moderate

Safety comes first!



"I've had 30 years of fire-fighting experience and 1 day of facing catastrophic fire weather conditions"

No blame

What were their insights from fighting a fire that was out of control and impacting on a community? - "Some community members were "in denial" about what they were facing making comments such as "it won't be that bad". This placed particular stress on those of us trying to manage on the fire-ground"

Leadership and no blame - Were crews directed to places that were safe?

What constitutes a safe place under catastrophic fire weather conditions? - Given that we had no real-time detailed knowledge of fire-spread (except what we were directly experiencing and learning from one another) knowing where was safe (now or in the immediate future) was particularly challenging"

Learning

"The event provided a rare opportunity to think – not just about processes and solutions – but how we think and feel, revealing a whole new perspective on the event. I learned far more from the field ride than I have from any debrief in the past, and as a result I have positively changed my attitude towards how I will do things in future."

Priorities

"Having the operational priorities was a real strength. We were able to use the operational priorities as a decision-making tool to know when to switch strategies. However, conveying that switch in strategy to other crews was - at times - challenging" (i.e. to convince crews that they needed to leave a house that was involved in fire and move on).

Culture change

"Five years ago we would never have had the courage to do this"



A Leadership Culture that is willing to listen to other people's stories so individuals and the organisation can learn and adopt.

A need to shift from sweeping vulnerabilities under the carpet to being open and receptive. This resourcing and support encourages people to share their stories.

Considerable investment has been made in tailored programs.

Story telling from adverse events must occur in the context of a "just culture" so personnel do not fear blame and judgement.

A number of learning tools were used (e.g. Professional Development, Table 1 and 2) and others developed to help inform decision makers.

Table 2—Managing Cognitive Challenges & Mental Shifts

| House affected | Houses affected | Town affected | Town and region affected |
|---|---|--|--|
| <p>Sufficient resources</p> <p>3-4 trucks or a bus</p> <p>Warnings, protect people, provide some property protection.</p> <p>Isolates if safe to enter clearing before fire comes through.</p> <p>Evacuation of house after work by putting out spot fires.</p> <p>Message: We can achieve our goals. Situation only require normal procedures.</p> | <p>Limited resources for situation. Houses are difficult to put out.</p> <p>Start prioritising.</p> <p>Issue warnings ahead of the fire coming through and encourage leaving, protect people who stay.</p> <p>Issue properties.</p> <p>Evacuate important assets, escort people to safer area. Protect structures after fire has gone through.</p> <p>Message: Leave houses to burn - we can't save everything, we'll achieve all the objectives. This is the only way out of normal.</p> | <p>Resource challenge - property move people to safer places.</p> <p>Evacuate people who are not safe, but that cannot be done.</p> <p>Keep fire fighters safe during the work.</p> <p>Evacuate houses and check on people who remain. Evacuate any people who are not safe to leave.</p> <p>Message: Evacuate houses and check on people who remain. Evacuate any people who are not safe to leave.</p> | <p>Evacuate people out of all houses and region.</p> <p>Evacuate people out of all houses and region.</p> <p>Evacuate people out of all houses and region.</p> <p>Message: Evacuate people out of all houses and region.</p> |

STORY TELLING MATTERS

The ride aims to foster reflection in a non-blame environment, by encouraging participants to understand the reasons behind their decision-making. By hearing the narrative of a complex and dynamic event as revealed in detailed stories of the personnel directly involved, it is possible to see things that might not normally be visible to participants, thus providing alternative ways of examining and reflecting on an event.

