

A decorative graphic at the top of the slide features a solid yellow horizontal bar. A green line starts from the left side of the bar, curves upwards and then downwards to the right, ending in a loop. A small black circle with four green dots inside is positioned on the green line where it crosses the yellow bar.

A Staff Ride of the Great Bear Wilderness Disaster:

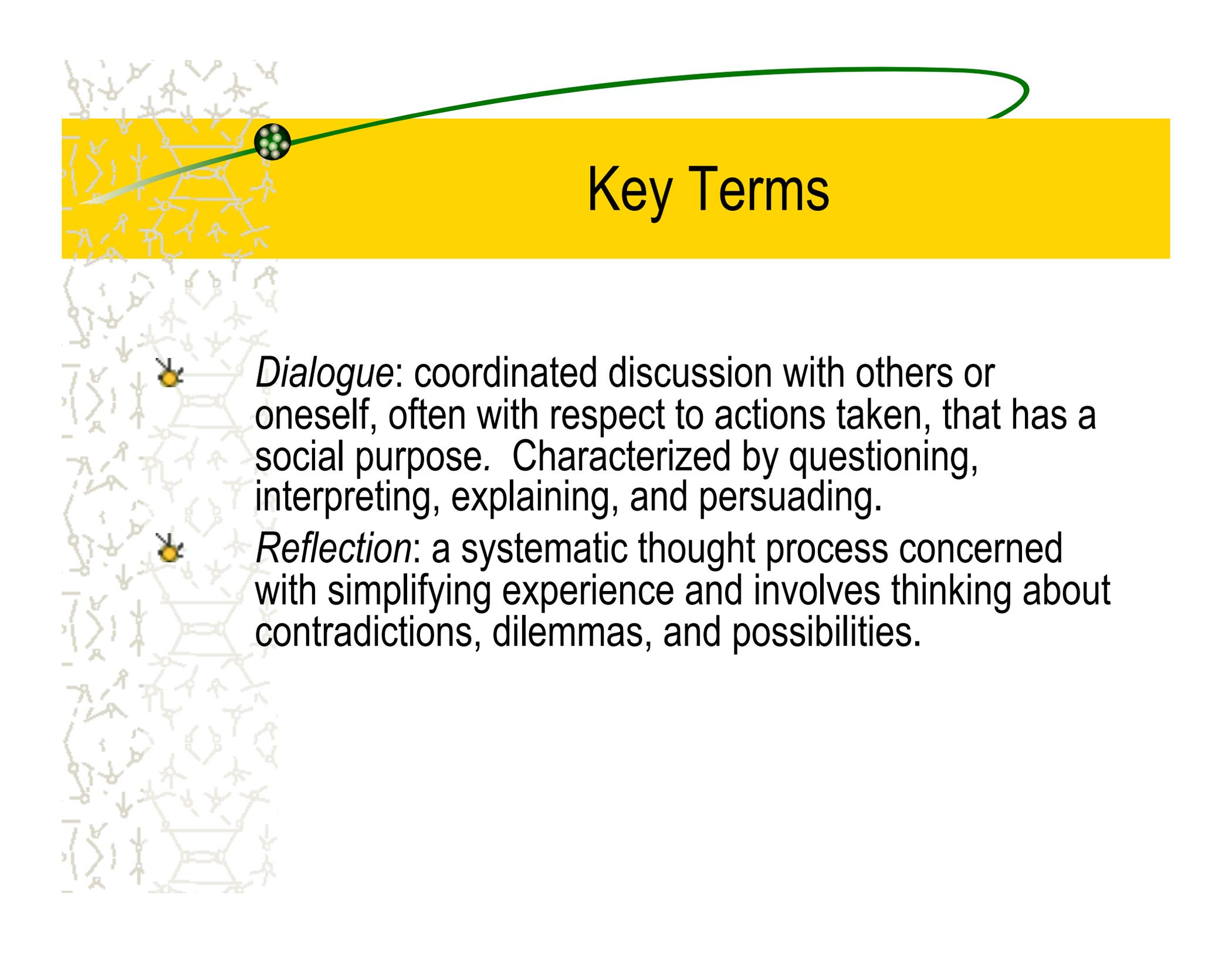
Michael J. Burke
Tulane University

Presentation at 2010 IOOB Conference, Houston.
Study conducted with Wendy Becker, Shippensburg University.



Objectives

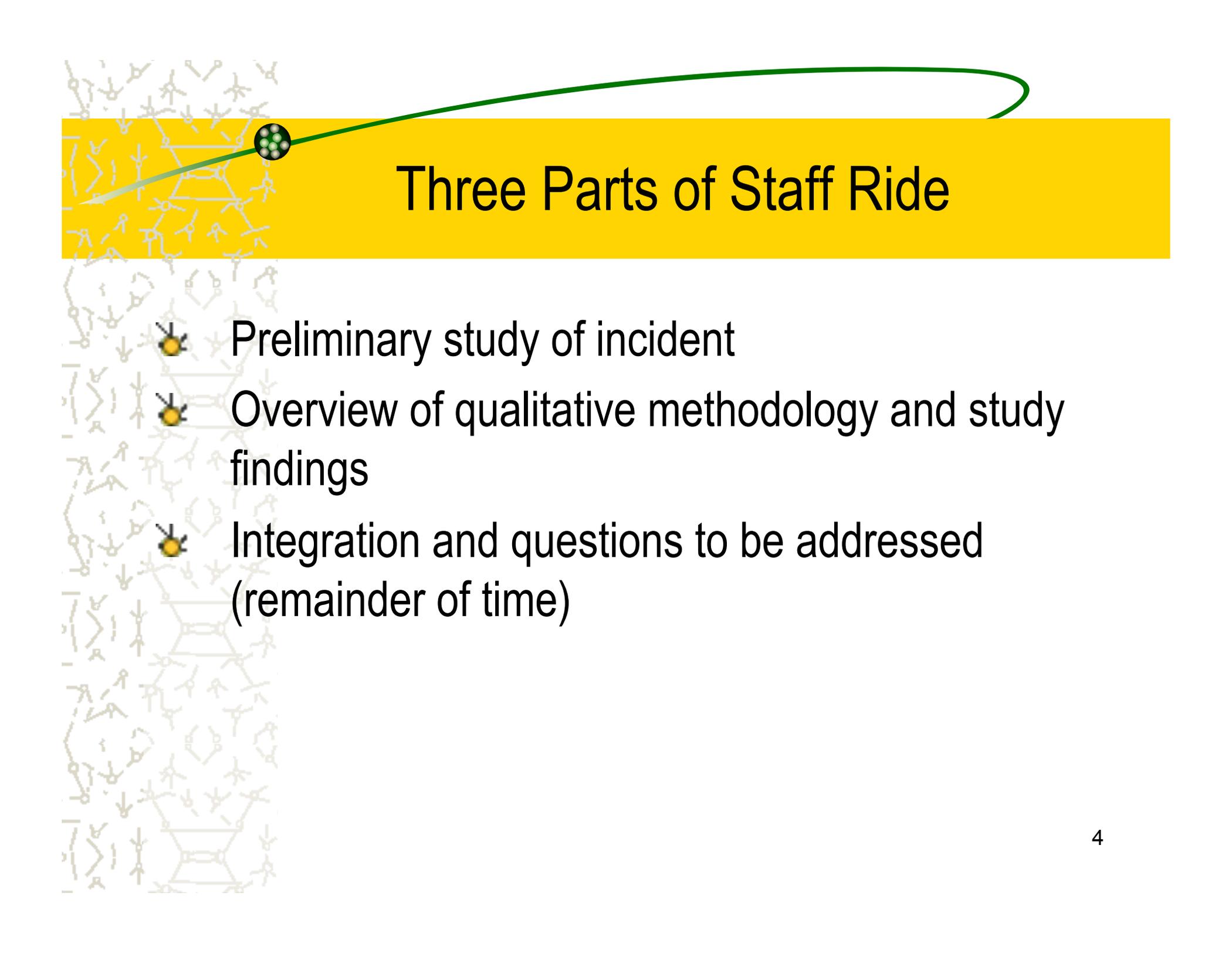
- ✿ Use “Staff Ride Model” to summarize the incident
- ✿ *Discuss* how we are qualitatively approaching the study of knowledge transfer and team efficacy development.
- ✿ *Present* general findings (to date) in relation to the transfer of knowledge and formation/reformation of individual and team efficacy.
- ✿ *Encourage* you to think about approaching a phenomena of interest from a qualitative perspective and considering the roles of dialogue and reflection in behavioral processes.



Key Terms

✿ *Dialogue*: coordinated discussion with others or oneself, often with respect to actions taken, that has a social purpose. Characterized by questioning, interpreting, explaining, and persuading.

✿ *Reflection*: a systematic thought process concerned with simplifying experience and involves thinking about contradictions, dilemmas, and possibilities.



Three Parts of Staff Ride

- Preliminary study of incident
- Overview of qualitative methodology and study findings
- Integration and questions to be addressed (remainder of time)



Why Study Small Plane Crash? (Theoretical Sampling Issue)

- ✂ Serious Incident U.S. Forest Service
- ✂ Contradicts our beliefs about search & rescue & the critical period
- ✂ Exemplar for retrospective psychological analysis

Preliminary Study: Summarizing The Mission

- ✦ **September 20, 2004**
- ✦ **Routine mission to Schafer Meadows**
- ✦ **Forest inventory research**
- ✦ **Pilot, 4 USFS crew**
- ✦ **Cessna 206, single-engine, fixed-wing**





The Passengers



The Aircraft Cessna 206



The Take-off Glacier National Park Airport



The Destination Schafer Meadows



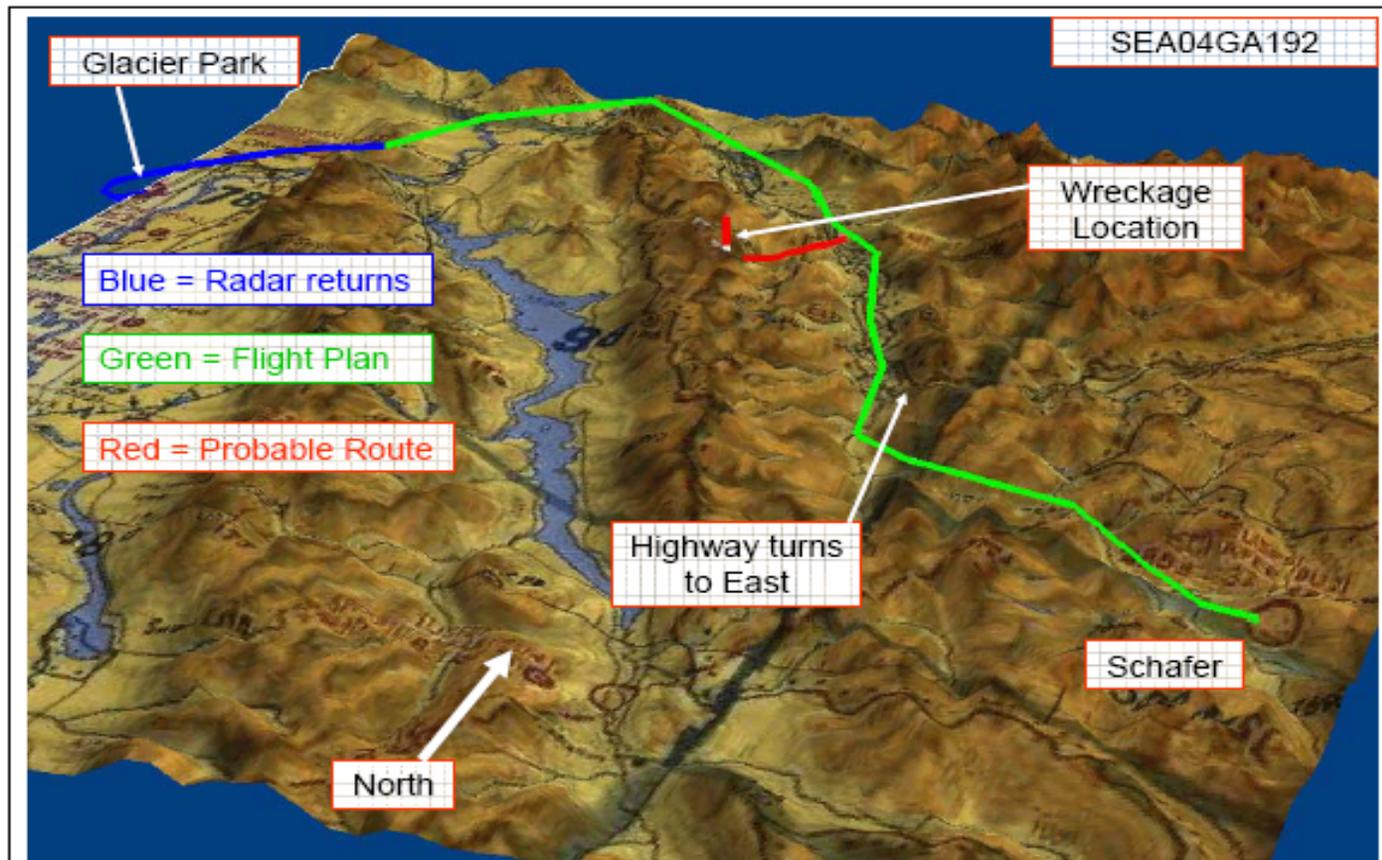
En Route

The Middle Fork Flathead River



The Incident and Terrain Model

flight planned route, and a presumed path from the flight plan to the accident site are also included. Note that all radar plots, locations, and descriptions of airplane movement are intended to indicate information available for display to ATC or Search and Rescue personnel for advisory, control, or SAR purposes. This graphic is intended as a visualization aid, and does not necessarily represent the exact performance of the vehicle.



Inspection of Wreckage



The Search



Air Search - Montana Department
of Transportation, Aeronautics



Ground search - Flathead County
Sheriff Department



U.S. Forest Service

Findings of Investigation

- ✿ Pilot Experience
- ✿ Personal Protective Equipment
- ✿ Radio Check-in Procedures



National Transportation Safety Board

Probable Cause:

- ✘ Pilot's misidentification of airplane location
- ✘ Improper decision fly into wrong drainage
- ✘ Failure to maintain terrain clearance
- ✘ Contributing factors
 - Low visibility due to mist
 - Obscuration of mountainous terrain
 - Pilot lacked experience back country flying



Our Qualitative Methodology

(with Wendy Becker, Shippensburg State)

- Integrated agency reports (NTSB, FAA, USFS)
- Constructed accident chronology
- Wrote narrative (verified by survivors)
- Studied **recalled** actions & dialogue of crew members:
 - 5 crew members
 - 7 critical decision points



Accident Chronology

(see handout for details)

Monday, Sept 20

- 1:00pm Scheduled Takeoff**
- 3:00pm Actual Takeoff**
- 3:30pm Plane Crash**
- 4:10pm Eyewitness Delivers Map FS Dispatch**

Tuesday, Sept 21

- 2:12pm Crash Site Located**
- 3:10pm Deputy Coroner Reaches Crash Site**
- 3:21pm Deputy Coroner Declares 5 Fatalities**

Wednesday, Sept 22

- 2:30pm Two Survivors Appear On Highway 2**



Crew (Team) Analysis Embedded

Monday, Sept 20

- 3:00pm 1. Pilot & COP Make Decision To Takeoff
- 3:15pm 2. Pilot & COP Disagreement in the Cockpit
- 3:30pm Plane Crash (Davita Bryant and Jim Long die in crash)
- 3. Jodee Rescues Matt
- 4. Jodee & Matt Rescue Ken
- 5. Ken & Jodee Convince Matt to Stay at Crash Site
- 4:10pm Eyewitness Delivers Map FS Dispatch

Tuesday, Sept 21

- 8:00am 6. Ken Dies; Jodee & Matt Leave Crash Site
- 2:00pm 7. Matt & Jodee Cannot Signal SAR & Keep Hiking
- 3:10pm Deputy Coroner Reaches Crash Site
- 3:21pm Deputy Coroner Declares 5 Fatalities

Wednesday, Sept 22

- 2:30pm Two Survivors Appear On Highway 2



7 Key Episodes/Decisions

1. Deciding to Fly in Bad Weather
2. Disagreement in the Cockpit
3. Returning to Burning Plane to Rescue Matt
4. Rescuing COP Ken Good
5. Staying at the Crash Site
6. Deciding to Hike off the Mountain
7. Deciding to Continue the Trek



Methodology/Data Analysis

- ✚ Coded verbatim survivor statements and retained statements related to three codes:
 - Transferring knowledge, dialogue and reflection, and self- and team-efficacy
- ✚ Arranged coded statements chronologically within seven episodes. **See handout for exemplars.**
- ✚ Attempted to address following questions with respect to each episode:
 - How does dialogue and reflection contribute, in both a positive and negative manner, to the transfer of knowledge among team members during a crisis?
 - How does dialogue contribute to the formation of individual and team (shared) efficacy?

Staying at the Crash Site

Dialogue between Matt, Jodee and Ken

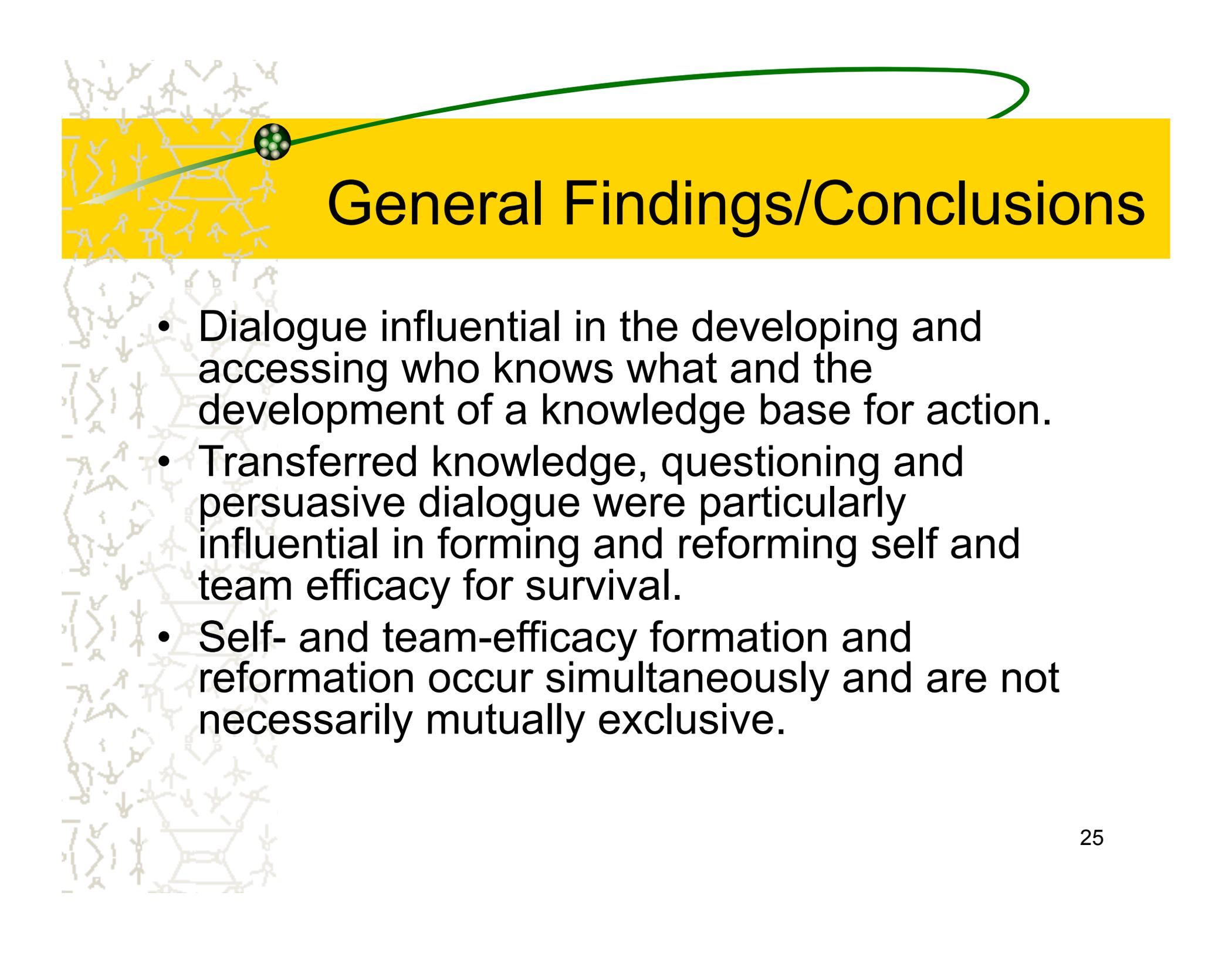


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Deciding to Hike off of the Mountain Dialogue between Matt and Jodee



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General Findings/Conclusions

- Dialogue influential in the developing and accessing who knows what and the development of a knowledge base for action.
- Transferred knowledge, questioning and persuasive dialogue were particularly influential in forming and reforming self and team efficacy for survival.
- Self- and team-efficacy formation and reformation occur simultaneously and are not necessarily mutually exclusive.



Integration and Further Questions

1. How does a newly formed team's transactive memory develop? How is it maintained?
2. How do individual and team regulatory processes such as those relating to efficacy interrelate and develop (especially during a crisis)?
3. How and when do different forms of interpersonal dialogue enhance or inhibit the transfer of knowledge during crisis events?
4. How do events that unfold during the critical period of the accident impact team decision-making?