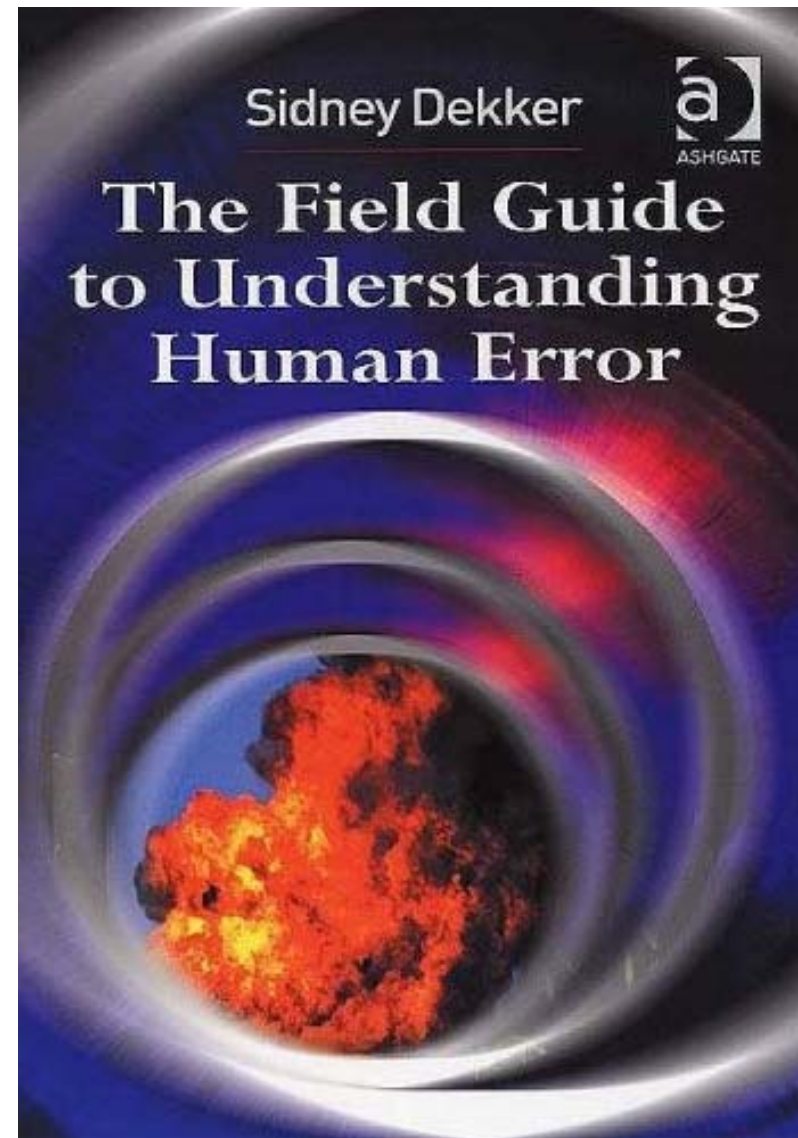# *The Field Guide to Understanding Human Error*

A Review

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Introduction

- Sidney Dekker is Professor of HF & Flight Safety at Lund University, Sweden
- This book was published in May 2006
  - Dramatically rewritten version of 'The Field Guide to Human Error Investigations'
- Contrasts a 'New View' with an 'Old View'
  - Some may consider certain elements controversial
- Some key concepts have been extracted here
  - Paraphrased & abbreviated where necessary
    - Any errors in this summary are mine alone
  - *My own 'original' input is in italics*

On What Goes Wrong

	Old View	New View
Human error is…	Found at the end of a HF investigation. Cause of trouble. Abnormal.	Found at the start of a HF investigation. Symptom of systemic trouble. Often 'normal' - *there are always holes in Swiss Cheese.*
A function the…	An individual	The system
Explained by …	Applying labels to the poor decisions & actions	Focusing on <u>why</u> the decisions & actions made sense at the time

On How to Get it Right

	Old View	New View
Complex systems are…	Inherently safe but _humans are the hazard_ (bad apples theory)	Not inherently safe with continual balancing of safety vs efficiency
To enhance safety…	React to minimise freedom at the sharp end (e.g. automation, tight SOPs & close supervision)	People make the sytems safe (_humans are the heros_) _so we use people to drive proactive improvement_
Solutions are…	Very specific, often local, quick fixes _or reminders not to…_	Wider changes based on deep systemic learning

Responses to Errors

- **Old View:**
  - <u>Blame & Train</u>
    - *Alternatively:*
      - *<u>'Just Investigate' then Train</u>*
        - » *Still reactive but better reporting*
      - *<u>Just Train</u> (on HF) – <u>Then Blame</u>*
        - » *Proactive & reactive but with more severe reaction*
  - Closer supervision
  - Tighter procedures
  - Weed out the bad apples - "Being bad is an individual choice"
    - *Reactively pre-empt their next failure*

- **New View:**
  - Only people keep complex systems safe
  - People don't come to work to fail
  - Safety is created through practice
    - *Proactively equip people to succeed*

Hindsight Bias

- When investigating errors you need to be aware of your potential reactions to errors:
  - Retrospective: You have plenty of time to gather data & analyse. You can have the luxury of knowing the outcome & being able to research the circumstances.
  - Proximal: You now focus on the people you think are close to the events.
  - Counterfactual: You then work out how they could have avoided the outcome that they didn't know was coming.
  - Judgemental: You then make judgement on their failure to prevent that outcome.
- If an investigator is not truly independent they can do a 'Performance Appraisal' not an investigation
  - Digging out 'relevant' past evidence - knowing what to look for
- To have a hindsight bias is to be 'Old View'
  - You will not be able understand human error this way

To Understand Human Error

- Reconstruct the actual changing circumstances the person was working in:
  - Easier than 'recreating' unobservable 'human factors' (e.g. labelled as 'fatigue', 'distraction', 'loss of situational awareness')
  - There is a strong two-way relationship between circumstances & behaviour:
    - Peoples behaviour changes the situation
    - The situation changes people behaviour
- You will then be able to show:
  - How system changed over time
  - How assessments & actions evolved in parallel
  - How the system influenced those assessments & actions

Labelling

- The label 'Human Error' is an unsatisfactory explanation for accidents
  - But so is the use of narrower labels:
    - 'Crew had a <u>loss of situational awareness</u>'
    - 'They <u>did not comply with the procedure</u>'
    - 'The shift supervisor was <u>complacent</u>'

- Valuable learning is obscured by fixating on bland 'folk law' labels
  - *Yet classifying / labelling errors is a popular activity, and the associated schema & their occurrence rates are frequent research topics*

Folk Law Labelling Example

- *Scenario:*
  - *Engineer with 2 hrs to end of shift starts a job*
  - *It is estimated to take <90mins*
  - *In fact this time it proves troublesome - 3 hr job*
- *The choice then is a Catch 22:*
  - *1) Stay on after hours*
  - *2) Hand over a part finished job to a fresh engineer*
- *If an incident occurs due to an misorientated component it would be easy to label as either:*
  - *1) <u>Fatigue</u> affected completion of demanding task*
  - *2) <u>Poor hand over</u> of a half finished demanding task*
  - *And add <u>poor planning</u> too for starting it at all!*
- *But do these labels really help us understand what happened or how to avoid it?*

Safety Culture

- A good safety culture allows the management to hear bad news *so they can act on it*
- Two challenges:
  - The 'Easy' One: People need to feel relevant & be empowered, have a mechanism to pass the bad news & there to be a commitment to act
  - Far Harder: To decide what is genuine bad news
    - *Complex systems are noisy*
      - *There is lots of news (good, bad & uncertain)*
    - Independent audit / monitoring helps
- All organisations have room to improve
  - One with a poor safety culture does <u>not</u> necessarily have more room to improve
  - It is just less willing & less capable of improving

Safety is a Tough Job!

- Safety Departments are sometimes pushed into:
  - Tabulating regular statistics that are then just filed
  - Compiling compliance evidence to have on the shelf
  - Cheerleading or nagging over the past accident rate
  - Being seen only as a cost centre that slows down production
  - Being excluded from advising on production trade-offs that affect safety
  - Providing just enough evidence to nail the guilty
  - *Being the apologist to external auditors & investigators*
    - *Including: "We found this so why didn't you?"*
- Diversion from asking the real hard questions

A Safety Department Needs

- Significant independent resources
- Direct high level access
- Constructive involvement in management activities & decisions
- To favour qualitative intelligence on safety performance over quantitative metrics
- To be staffed by safety professionals who are grounded in the operational realities
  - *Not simply 'ex-pilots' or 'ex-engineers'…*

A Safety Dept Should

- Be sensitive to wider concerns:
  - Investment in safety is easier if production goals are being achieved
- Provide persuasive safety intelligence
- Be concerned 'outsiders' who understand the 'inside' of the organisation
- Be above all:
  - **Informed, independent, informative & involved**

Accepting the New View

- Recognise that human errors are symptoms of organisational problems
- Develop an unease with your organisation, rejecting blame & knee-jerk quick fixes
- Recognise that people make the system safety
- Invest in systemic improvements
- **Ultimately: learn how to learn from failure, manage how you manage safety**