

Book Review: Close Calls: Managing Risk and Resilience in Airline Flight Safety by Carl Macrae

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*In **Close Calls: Managing Risk and Resilience in Airline Flight Safety**, Carl Macrae offers a new study of organisational learning in the civil aviation industry, examining how crucial insights are garnered from experiences of near misses – what he terms ‘close calls’. This is a fascinating and lively account that illuminates the invisible infrastructures that capture and transform risk, offering important lessons for those working to ensure organisational safety across different institutions and environments, writes **John Downer**.*

Close Calls: Managing Risk and Resilience in Airline Flight Safety. Carl Macrae. Palgrave. 2014.

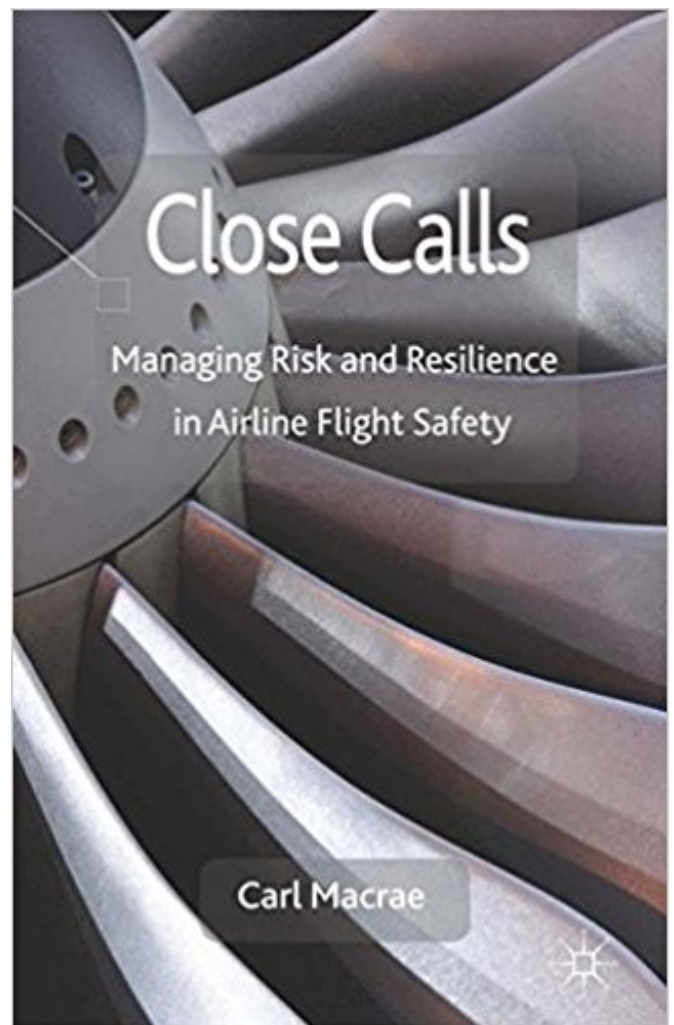
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There were 51 fatal commercial airplane accidents in 1929, roughly one for every million miles flown. The same accident rate today would imply over 7,000 fatal crashes per year: almost twenty a day. Yet modern airlines are orders-of-magnitude safer than this. Each day a remarkable feat of choreography occurs, as tens of thousands of jetliners – each comprising millions of tightly integrated components – lift their passengers high above the clouds and return them safely to earth. In 2016, scheduled commercial airlines in the United States flew without a single fatality for the sixth year in succession.

‘Safety is no accident’, as it is written in granite outside the UK aviation regulator’s headquarters. It is, rather, a long-term organisational achievement. The impressive safety of modern civil aviation reflects a vast number of incremental improvements, made both to the planes themselves and to the organisations that manage them. Underlying this process of refinement has been a fierce and longstanding commitment to institutional learning. The risks of commercial flight have fallen, decade on decade, as managers, operators and engineers have methodically deconstructed their errors and rendered them into lessons.

Carl Macrae’s *Close Calls: Managing Risk and Resilience in Airline Flight Safety* is an intimate account of this learning process, broadly framed in relation to the ‘High Reliability Organisations’ literature. Drawing on extensive fieldwork conducted in the UK and Australia across five large airlines and two air safety agencies, Macrae explores how flight safety investigators approach the challenge of distilling insights from non-catastrophic safety incidents (his ‘close calls’).

Civil aviation is an ideal context in which to examine this process. The industry’s dedication to interrogating its own failures is unparalleled, as is reflected in the scale and sophistication of its investigatory infrastructures. And the



fruits of this labour are plain to see. As noted above, few organisations can boast safety achievements to match those of modern airlines, where the potential for disaster is so at odds with its prevalence.



Image Credit: (OntheWay Advice CCO)

The book's focus on close calls or near misses – 'incidents' rather than 'accidents' – is similarly welcome. The academic literature on operational safety has long mined disaster investigations for insights into organisational learning. Accidents inevitably become sparser as organisations become safer, however, and beyond a certain point organisations aiming to achieve extreme levels of performance must look elsewhere for their insights. Close calls – accidents avoided by chance more than by design – become a valuable resource in these circumstances, and airlines work hard to interrogate them. Yet this work has traditionally received less attention from scholars.

The relative lack of academic scrutiny afforded to interrogating close calls is understandable but unfortunate. Understandable because such work is usually low profile. Unfortunate because it is vital, and because wringing useful insights from accidents that never happened means confronting unique and undertheorised challenges. As Macrae puts it, investigators of close calls are mining a 'less pure seam' than their disaster-investigating colleagues.

The unique challenges posed by close calls become evident if we simply consider the difficulties inherent in their identification. When a 747 pilot misjudges their landing in the fog and clears a luxury hotel by a few feet, sending guests screaming into the streets (as occurred just outside of Heathrow in 1989), then the danger is self-evident. Many brushes with disaster are much less transparent, however, to the point where most can easily pass unnoticed amidst the normal fluctuations of operational practice. A flight controller who almost confuses one call sign for another, for instance, might barely skirt catastrophe without ever recognising the danger or leaving a trace.

One of the book's many strengths is the uncommon sophistication with which it formulates these practical and epistemological challenges. Its opening chapters dwell at length on the complexities of learning and sense-making in an environment where signals are weak, interpretations flexible and causes contested. Eschewing easy simplifications, it lucidly summarises the issues involved, while outlining their prior treatments in the literature.

Having unpacked and theorised the challenges posed by close calls, the book then turns to the question of how flight safety investigators confront those challenges. Herein lies the heart of the narrative: an intimate ethnographical

examination of the cognitive work involved in identifying, interpreting and operationalising ambiguous risks in a high-stakes environment. The complexity of the undertaking being explored here is reflected in the scope of this discussion. There are few easy answers on offer, only a wide-ranging exploration of practical theories and situated practices, each with its own ambiguities and limitations. This is as it should be. Nuanced organisational practices are not easily distilled into fridge magnets.

The book is no less fascinating for this. Reading Macrae's lively account, it is difficult not to be impressed by the intricate conceptual frameworks, procedural tools and organisational structures that his investigators have developed to mine their 'impure seam' for its invaluable lessons. From rules that facilitate error-reporting in an arena that is sensitive to misconduct, to heuristics that help investigators interpret fleeting moments of deviance, he elegantly and eloquently illuminates the invisible infrastructures that experts use to capture moments of organisational risk and transform them into sources of resilience.

Collectively, Macrae's collated insights constitute an important window into what it means to be working at the frontiers of organisational safety. And, as he makes clear, many have bearing far beyond the aviation sphere. From operating theatres to reactor control rooms, there are many safety-critical operational environments where close calls and near misses might be leveraged more effectively to similar ends. Through his work, safety scholars and risk managers of all types stand to learn from aviation's battle-hardened practices.

John Downer is Lecturer in Risk and Regulation at the University of Bristol's School of Sociology, Politics and International Studies. He has written extensively about risk management in the context of civil aviation and nuclear energy, and is currently working on a related book project, which is so delayed at this point that friends call him George R.R. Martin behind his back.

Note: This review and interview gives the views of the author, and not the position of the LSE Review of Books blog, or of the London School of Economics.

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