# Team Resource Management (TRM): A Tavistock Approach to Leadership in High-Risk Environments[1]

## Resonances of 9/11

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**Abstract**

The purpose of this article is to build upon the study of *organizational disaster* by analysing essential elements of a new team training model called Team Resource Management (TRM). Reviewing the history and methods of Crew Resource Management (CRM), a popular aviation training programme that has spread to other high-risk, high-hazard industries, the article considers its roots in American sensitivity training and identifies a need for a Tavistock-based approach to team training. The article argues that effective leadership training for teams operating in high-risk environments depends on developing events that can foster an examination of authority issues, illuminating both overt and covert group processes that can impede decision-making, and proposes seven guideposts to assist in programme development.

Interest in the psychoanalytic study of *organizational disaster* with a particular focus on analysing factors that lead to performance breakdown, accident and death in high-risk industries has been growing. Examples include analysis of the National Aeronautics and Space Administration (NASA) (Schwartz, 1987, 1989; Stein, 2004), the Three Mile Island nuclear reactor (Stein, 2004), a 1996 Mount Everest climbing expedition (Kayes, 2004) and the Mann Gulch Fire (Wieck, 1993; 1995).

Prior to these studies Schwartz (1989) noted that explanations of disasters often assumed the critical incident resulted from a single flawed decision. In this view a disaster was 'an aberration, an unfortunate

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accident – as much a tragedy for the well-meaning and generally competent *individuals* [italics added] who made the decision as for its more direct victims' (*ibid.*, p. 319). Analysis focused almost exclusively on individual errors while training aimed to mitigate the reoccurrence of these individual failures through repetition.

Little research at the time considered the influence of group dynamics or systemic factors on team performance prior to or during the disaster period. Recent research has shifted to consider these elements revealing, as Kayes (2004) observed, that disasters are often preceded by a 'breakdown of *team* learning' (p. 1264, italics added) in response to anxieties created by changes in the environment.

In other words, disasters resulted from a team's failure to sense the severity of an impending problem, surface conflicts and discuss errors creating obstacles to environmental adaptation and *team learning*. By contrast, *team learning* is fostered when the team can tolerate ambiguity and a state of *not knowing* as information reveals itself over time, analyse and learn from experience, and discuss conflicts and errors in a timely fashion.

How teams, in general, and leaders, in particular, respond to anxiety and what Stein (2004) called the 'critical period' (p. 1244) as the disaster unfolds is pivotal to the team's learning process. Although a wide variety of organizations increasingly rely on teams and 'researchers know that muddled team process often leads to disastrous consequence' (Kayes, 2004, p. 1263), little has been written about methods of *prevention* or the training process by which teams might avoid these unfortunate pitfalls.

This essay attempts to fill this gap. In particular, I argue that effective leadership training for teams operating in high-risk environments depends on developing programmes that can foster an examination of authority issues, illuminating both overt and covert group processes that can impede decision-making, often in fatal ways. Reviewing the history of existing models, the essay identifies a need for a Tavistock-based approach to team training and offers seven guideposts for programme development.

## A NEW OPERATING ENVIRONMENT

Effective leadership requires more than vision, charisma and take-charge decisiveness. To be successful, today's leaders need to understand *systems psychodynamics* or the individual, group and systemic influences that shape decision-making (Fraher, 2004a, 2004c, Gould, Stapley and Stein, 2001; Miller, 1993; Miller and Rice, 1967). Even technical and professional fields once strictly guided by licensing,

qualifications and regulations, such as aviation, automotive, fire fighters, law enforcement, medicine, military, and nuclear power, have been challenged to become more flexible and collaborative than ever before. Many recent studies (Fin, 1995; Fraher, 2004a; Kern 2001; Krause, 2003; Mearns *et al.*, 2001; Salas *et al.*, 2001; Weiner *et al.*, 1993) provide evidence from 'a number of high-hazard, high-reliability industries showing how failures of communication, poor teamwork and poor leadership are common human factors precursors to accidents' (Mearns *et al.*, p. 378).

Without exception, industry experts describe the post-9/11 world as a *new operating environment* increasing demands for better communication, team-building expertise and peer mentoring capacity. For example, 9/11 in New York taught us that law enforcement teams need to collaborate with fire fighters, ambulance paramedics, politicians, and emergency response teams within the transportation system. On 7/7 in London, we saw excellent examples of this increased collaboration. As a result, both casualties and chaos were contained.

Since 7/7, police chiefs from around the US have been working to create 'an informal network' for more 'rapid communication . . . They [also] hope to work with police forces in Europe, the Middle East and Asia to share information' (Broder, 2005, p. A12). This new operating environment requires knowledge and skills beyond the technical ones traditionally taught in professional programmes. To succeed, it is no longer enough to achieve technical competence; one must develop the awareness, skills, and behaviours necessary for safe and efficient operation in today's increasingly dynamic environments. This new, more *present* leadership model would support leaders who can communicate across many different boundaries, manage themselves in multiple roles, and hone reflective capabilities using what has been called *emotional intelligence* to inform actions. Such leaders would understand how authority dynamics affect formal and informal leadership roles and be better able to manage resistance to change.

In fact, research has shown that 'in leadership positions, almost 90 percent of the competencies necessary for success are social and emotional in nature' (Cherniss, 2000, p. 434). Emotional intelligence skills such as the ability to stay motivated, face frustration, control impulses, manage anxiety and 'keep distress from swamping the ability to think' (Goleman, 1995, p. 34) become critical to decision-making under conditions of stress. Goleman claimed that these skills 'can be as powerful, and at times more powerful, than IQ' as a determinant of successful job performance (p. 34).

Yet, emotional intelligence largely has been overlooked in leadership and team training. Once 'considered an oxymoron by some'

because 'emotions convey the idea of unreasonableness,' (Mayer *et al.*, 2000, p. 93) new brain research reveals the emotional and cognitive centres of the brain to be far more integrated than previously thought. And, important for development of new team training, Goleman (1995) noted these 'crucial emotional competencies can indeed be learned' (p. 34.).

Understanding the emotional intelligence of a group's leader as not simply an *individual's* leadership characteristic; Cherniss (2000) emphasized that it has 'a powerful impact on the *group's* climate and effectiveness' (p. 450, italics added). Although the leader and group share this powerfully interdependent relationship, 'the emotionally intelligent leader is aware of these influences', understands 'group, intergroup and organizational dynamics, particularly as they affect emotional functioning, and [is] skillful in working with those dynamics' (p. 450). As a result, even leaders in highly specialized and technical fields can – and should – develop skills of observation, analysis and reflection in order to increase their job performance.

Exploring how professionals in high-risk fields might increase their awareness of the interdependent nature of groups and learn to manage anxiety in order to continue thinking and functioning in stressful situations has not been undertaken until recently. One team training model called Crew Resource Management (CRM) emerged twenty years ago in the field of aviation and has proved popular, spreading to other technical fields. Its persistence warrants further consideration. Yet, as I will demonstrate in the following brief history, early CRM models relied too heavily on changing individual behaviour without increasing awareness of group and systemic dynamics, which ultimately limited its usefulness. In order to meet the needs I have identified, a new team training approach is required.

## AN EXISTING MODEL: THE ROOTS OF CREW RESOURCE MANAGEMENT (CRM)

### *Human error and accidents*

Initially termed *Cockpit* Resource Management, CRM emerged largely as a bi-product of the Jet Age, morphing into *Crew* Resource Management when flight attendants, dispatchers and aircraft mechanics joined pilots in the training. As jet aircraft became the mainstay of commercial air travel in the 1960s, the safety and reliability of jet engines drastically reduced both maintenance problems and the number of aviation accidents, illuminating the fact that human errors played a part in 70–80% of aircraft mishaps. 'The conclusion drawn

from these investigations was that "pilot error" in documented accidents and incidents was more likely to reflect failures in team communication and coordination than deficiencies in "stick-and-rudder" proficiency' (Helmreich and Foushee, 1993, p. 7).

In other words, misunderstandings and miscommunication between crew inside the aircraft, often compounded by those with others outside the cockpit, were a factor in *nearly all aircraft accidents*. Yet, effecting cultural change would prove daunting, as aviation's roots in individual measurements of performance proved firmly embedded.

### *Entrenched ethos: individual proficiency*

Perhaps influenced by the bravado of war fighting and barn-storming in the early twentieth century, aviation culture historically has celebrated the courageous young dare-devil pilot and his individual flying acumen; rarely, if ever, has it lauded teamwork. Pilot training, whether conducted in military, commercial or general aviation arenas, often was accomplished one-on-one in boot camp fashion, where flight instructors demonstrated and students unquestioningly mimicked behaviour and technical manoeuvres under a barrage of verbal direction. There were few standardized methods of instruction and 'communication between the instructor and student was woefully inadequate, consisting mostly of shouting above the wind and engine noise' (Brady, 2000, p. 22). The goal – and first major achievement in any pilot's career – was to *fly solo*.

Even at major commercial airlines, until very recently, a pilot was deemed competent when he or she could demonstrate proficiency in flying a standard set of manoeuvres. Although pilots usually fly in crews, competence had little to do with teamwork or error management in the cockpit. It is 'only within the last decade' that we have 'begun to consider this issue of crews and groups . . . in the training of teams that fly commercial aircraft' (Ginnett, 1993, p. 72).

The vast majority of airline pilots have been military trained. In addition, in the US, most of the Federal Aviation Administration (FAA) inspectors who, in coordination with airline leaders, developed the training, checking, and standard operating practices were also from a military background. A homogenous group, these ex-military pilots created a culture to which they were accustomed. This culture respected rank and authority, valuing captains who took charge and acted decisively and subordinates who followed orders, rarely questioning authority or the decisions of superiors.

Reflecting these values, industry leaders developed a training environment that measured 'individual proficiency' by requiring 'each

captain to demonstrate the ability to handle' without assistance 'nearly every conceivable situation that might be encountered in flight' (Birnbach and Longridge, 1993, p. 265). Called *first officers*, copilots' individual proficiency was measured by how well they assisted the captain. In fact, Helmreich and Foushee, (1993) noted 'in 1952 the guidelines for proficiency checks at one major airline categorically stated that the *first officer should not correct errors made by the captain*' (italics added, p. 5). The individualistic norms underpinning aviation culture today continue to reflect this early acculturation process, despite the fact that the history of aviation accidents suggests that error management depends on recognizing how authority relations can interfere with decision-making.

### *A case study: Florida Everglades*

One aircraft accident that attracted the attention of aviation industry leaders in 1972 and illuminated deficiencies in team training practices was Eastern Airlines 401. A Lockheed L-1011, Flight 401 crashed in the Florida Everglades fatally injuring ninety-nine passengers and five crew members after an experienced aircrew became distracted by a burnt out landing gear light bulb. Unbeknown to the crew, the aeroplane began a slow descent after a newly installed autopilot was inadvertently disconnected during their trouble-shooting.

Upon investigation, the Safety Board found that many pilots interviewed did not fully understand the autopilot's features and 'were unaware of the minor control column inputs needed to effect a change in the aircraft's attitude' (Krause, 2003, p. 138). Air Traffic Controllers (ATC) compounded the communication and performance breakdown within the cockpit by their vague inquiry – 'How's it goin' out there, Eastern?' – when they observed the aircraft had departed its assigned altitude on a steady descent to impact.

How had a highly trained, professional aircrew team in a modern, well-equipped jet crash their plane over a '59-cent' light bulb? And why did ATC not inquire more specifically about the plane's descent, taking up their authority to challenge the aircrew's violation of Federal Aviation Regulations by departing from its assigned altitude without clearance? And why had the pilots not been properly trained on the new autopilot system? It became evident that individual, group and systemic factors were all involved in the accident's evolution.

By the mid-1970s many research studies, including several at NASA, examined the human factors behind aviation accidents. Between 1968 and 1976, George Cooper and Maury White conducted a detailed analysis of commercial jet accidents worldwide, concluding

that most incidents were correlated with 'various failures of command, communication, and crew coordination' (Weiner *et al.*, 1993, p. xvii). Ruffell Smith's (1979) research was even more specific, citing a need for increased awareness about the role of *management skills* in cockpit operations. Although these studies heightened awareness of core issues, it was an incident in the Canary Islands that further revealed the complex interrelatedness of authority relations and accidents, providing an industry wide impetus to develop new team training methods.

### A case study: Tenerife

On March 27, 1977 the most deadly aircraft collision in history occurred at Los Rodeos Airport, Tenerife when KLM-Royal Dutch Airlines Flight 4805 collided with Pan American Flight 1736 killing 583 passengers and crew. Both 747s had diverted to the tiny mountainous airport due to bomb threats at their destination, Las Palmas. The weather was overcast and foggy upon arrival and steadily deteriorated as the two large jets loitered around the confines of the single runway, waiting for their destination to reopen.

As Chief Training Captain for the 747 fleet, the KLM captain was very experienced and routinely featured in company advertisements. His copilot was also an experienced pilot, but brand new to the 747. In fact, the captain had recently given him his 747 checkride.

The Spanish air traffic controllers had difficulty communicating in English and, exacerbated by the Dutch copilot's non-standard phraseology, there were numerous misunderstandings. After a lengthy delay, Las Palmas reopened and the two jumbo jets attempted to manoeuvre for takeoff within the limits of the small airport.

KLM taxied down the foggy runway first, turning 180° into position for takeoff. Unbeknown to the eager Dutch captain, Pan Am was taxiing immediately up the runway behind them. As the KLM captain began the takeoff roll the copilot exclaimed 'Wait a minute, we don't have an ATC clearance.' The captain braked, responding 'No . . . I know that. Go ahead and ask.' Dutifully, the copilot asked for takeoff clearance and was told to 'standby for takeoff.'

Nevertheless, the eager KLM captain said 'Let's go' and initiated his takeoff again. The copilot, clearly alarmed, exclaimed meaninglessly over the radio 'We are now at takeoff!' further confusing communications between Pan Am and ATC.

The fog was so thick, neither ATC nor the taxiing Pan Am crew could see the end of the runway or KLM accelerating down it. Seconds later the Pan Am crew identified KLM's lights coming out of the fog

and frantically attempted to clear the runway as the KLM captain rotated, forcing the jet into flight. Although KLM's nose gear passed over the other 747, the main landing gear sheared off Pan Am's upper deck and both aircraft were destroyed by fire.

Accident investigators determined that poor communication and use of non-standard terminology were the main causes of the collision and resultant deaths. Perhaps even more importantly, analysts wondered why such an experienced KLM crew could make such a basic, yet catastrophic, mistake. Why was the KLM captain so reluctant to accept input and why did the copilot, who clearly knew they had not been issued takeoff clearance, not speak up more assertively to prevent this accident?

In a break with aviation tradition novel for 1977, 'safety analysts believed it was possible that the first officer, who had only 95 hours in the 747, and who was flying with the KLM chief 747 instructor, *may have been intimidated by the captain's legendary status*' (italics added; Krause, 2003, p. 210) In other words, it was an *authority issue*: the combination of the captain's impressive persona and the copilot's lack of confidence flying a new aeroplane resulted in an experienced copilot becoming confused, questioning his sense-making capabilities. Was this example of the powerful influence of authority dynamics over human behaviour an anomaly? History proves otherwise.

### *A case study: Portland, Oregon*

A third stunning breakdown in crew coordination, also compounded by authority issues, occurred just a year and a half later when a United Airlines DC-8 ran out of fuel six miles from its destination. Although the copilot and flight engineer attempted to draw attention to the aircraft's dangerously low fuel state, the highly experienced and authoritarian captain pushed forward his agenda, paying little attention to the growing concerns of his crew.

On December 28, 1978 United Flight 173 lowered the landing gear for arrival in Portland, Oregon and the crew observed an unsafe landing gear indication followed by a loud thump, abnormal vibration and aircraft yaw. Although the backup systems indicated that the gear was in fact safely down and locked properly, the captain requested a holding pattern to communicate with company maintenance, dispatch, and destination operations about the aircraft's status.

The captain grew increasingly fixated on the chance that the gear might collapse on landing, igniting onboard fuel supplies. As a result, he delayed landing for almost an hour as he coordinated with flight attendants for a possible emergency evacuation on touchdown. The

captain became so distracted by these self assigned tasks, when the copilot informed him the first of their four engines would soon fail the captain inquired 'Why?' As first one engine then another dropped off due to fuel starvation, the captain finally recognized the severity of the situation demanding 'You gotta keep 'em running . . .' and the flight engineer dutifully replied 'Yes, sir.'

The National Transportation Safety Board determined that the probable cause of the accident was not only the captain's failure to monitor and respond to the aircraft's low fuel state but also the failure of the first officer and flight engineer to make him aware of the severity of the situation. Although the Board recognized that 'the stature of a captain and his management style may exert subtle pressure on his crew to conform to his way of thinking and may hinder interaction and adequate monitoring, forcing another crewmember to yield his right to express an opinion' they concluded that the other aircrew were also culpable, exemplifying a 'recurring problem' (NTSB Report DCA79AA005, 1978). As a result, the Board recommended the development of an assertiveness training programme for all airline cockpit and cabin crew members as part of a standard curriculum.

*The emergence of aircrew training programmes: Blake, Mouton and NTL*

In less than six years, almost seven hundred people had been needlessly killed in aviation accidents, hundreds more seriously injured, all involving aircrew error and US air carriers. Industry leaders knew they desperately needed a new team training model that could address aviation's entrenched ethos and the complex authority dynamics of teams operating in stressful environments.

The first CRM workshop was held in 1979, sponsored by NASA, and entitled *Resource Management on the Flightdeck*. Workshop discussants agreed that failures of 'interpersonal communications, decision-making, and leadership' (Helmreich *al.*, 1999, p. 19) in particular, were underlying factors in the majority of air crashes to date and training was required. United Airlines took the lead, developing the first comprehensive CRM programme in 1981 (Cook, 1995).

Heavily influenced by the thinking of Robert Blake, an early National Training Laboratories (NTL) enthusiast,[2] and his cofounder of Scientific Methods Inc., Jane Mouton, United's training was based on popular management efficiency programmes which had been implemented successfully in a number of major US corporations in the 1970s. Entitled *Command/Leadership/Resource Management* (C/L/R), United's programme 'emphasized changing *individual* styles and correcting deficiencies in *individual* [italics added] behavior such as a lack

of assertiveness by juniors and authoritarian behavior by captains'
(Helmreich *et al.*, p. 20).

The centerpiece of Blake and Mouton's (1964) training approach was
the now famous *Managerial Grid*, in which participants were asked to
respond to a series of survey questions designed to elicit attitudes
towards *task* and *people*. For instance, a person with low concern for
task accomplishment but high concern for people had a *country club*
leadership style. A person with high concern for task accomplishment
but low concern for people was considered to have an *authoritarian*
leadership style. The training was intended to provide opportunity for
participants to reflect on their personal managerial styles and consider
how others may perceive their individual behaviour in groups.

It was these feedback exercises that became notorious amongst
pilots. Typically linear thinkers, many pilots were ill equipped emo-
tionally and psychologically to deal with what felt like an onslaught
of judgemental, personal criticism masked as 'feedback' (Bradford *et
al.*, 1964, p. 16) from peers and subordinates. Unfortunately, many par-
ticipants were forever alienated by this approach, creating staunch
critics of the value of this important training.

Cook (1995), a 737 captain, noted that 'although the developers of
the United CRM program deny it, elements of T-group and sensitivity
training are certainly involved' (p. 30). Clearly not a supporter of this
training perspective, Cook recounts how 'during a sales presentation
of the course' a representative from Scientific Methods 'explained with
apparent satisfaction how he had witnessed captains and, in one
instance, a chief pilot, break down and cry before the group during the
final evaluation' (p. 31). Appalled by this 'personality shredding',
Cook observed that the 'difficulty stems from an emphasis on attitudes
and motivations rather than behavior' (p. 31).

## A NEW TEAM RESOURCE MANAGEMENT (TRM) PEDAGOGY

Although many team training programmes adequately address the
first challenge illuminated by the Florida Everglades, Tenerife, and
Portland aircraft accidents by improving communication and empha-
sizing the dangers of non-standard behaviours, few programmes ade-
quately address the second – *how to negotiate the dynamics of authority
relationships*.

When training does include group dynamics components, it often
reflects the theories and methods of the US-based NTL and their
T-group and sensitivity training approach. Because most CRM train-
ing programmes have roots in the early model developed in the
United States by Blake and Mouton, this finding is not surprising.

Little, if any, CRM training has utilized a Tavistock approach to the analysis of group behaviour originated in the UK in the post-Second World War period.

In contrast to NTL's interpersonal perspective, the Tavistock approach refocuses the level of analysis on covert group processes – the often unspoken dynamics of authority within the group – and considers authority not as an individual's characteristics but as patterns of relationship found in the group as a whole. Rather than relying on NTL-feedback exercises, which may lead to individual resistance and perceptions of 'personality shredding', the Tavistock approach aims to expose people to the realities of the messy, conflict-ridden complexity of group life. This approach provides no easy measures for understanding one's *managerial style*. Instead, it assumes that groups work in cyclic, not linear, ways, oscillating from anxiety modes to work modes and back again, and focuses on heightening the group's awareness of individual psychology, group dynamics and systemic factors so that teams can operate more effectively.

One might ask: why does it matter which perspective – NTL, interpersonal; Tavistock, group-as-a-whole – to employ in team training? The answer lies in where responsibility is placed – in other words, *who is authorized* – to make changes within the system. Are individuals made to feel *personally* responsible and defensive, leading to perceptions of 'personality shredding'? Or, as Majors Wilfred Bion and John Rickman (1943) proposed during their group study at Northfield Hospital during the Second World War, are team failures seen as a disability of the community as a whole? (Fraher, 2004b)

Although both the NTL and Tavistock models are based on *experiential* pedagogy, such as investigating the group as a microcosm of society, studying behaviour as it occurs in the here-and-now, and providing opportunities for individuals to interpret their own learning experience, the two models emphasize distinctly different behaviours (Fraher, 2004b; Miller, 1993; Neumann *et al.*, 2004). For example, the pedagogy employed at many current CRM training events is one in which participants are helped to diagnose and experiment with their own behaviour and relationships during group learning activities. More specifically, these NTL-influenced models focus on modifying an individual's directly observable behaviours and attitudes through a variety of feedback exercises (Fraher, 2004b).

In contrast, the Tavistock model's *group relations events* provide opportunities to examine covert, unconscious group behaviours, especially in relation to authority figures, within a temporary social institution (Fraher, 2004b; Klein and Astrachan, 1971; Neumann *et al.*, 2004). This model fosters the study of authority, and the obvious and

not-so-obvious dynamics that influence the success and failure of leadership efforts, such as the glaring deficiencies illuminated in the previously discussed aviation mishaps. Understanding authority and how it influences people's behaviour in groups must become a central concept in Team Resource Management (TRM) programmes.

Heightening TRM trainees' awareness of covert processes at the group-as-a-whole level would enable them to understand better the systemic influences on the group's decision-making capacity, better preparing them to take responsibility for their behaviour as a group. Ironically, by focusing on the group's dynamics and shifting attention away from the individual, individual leadership capacities are fostered. In other words, increased awareness of the group as a whole enables trainees to learn to manage themselves in the multiple roles necessary for contemporary leadership by encouraging critical thinking about the covert processes that can influence the success or failure of leadership efforts.

Although Cook (1995) argued 'until research results are available, *CRM training should de-emphasize the study of leadership*' (p. 32, italics added), I disagree. The changed political, social and technical contexts identified at the beginning of this essay indicate that the time is ripe for pioneering new leadership and team training practices and conducting research on their effectiveness. In the following section I offer seven guideposts for the development of a new Tavistock-based team training model called TRM.

## GUIDEPOSTS TO TRM TRAINING DESIGN

### *Study the organizational culture*

TRM should never be considered an off-the-shelf product, equally applicable to any high-risk industry in any country. In order to provide effective team training, a TRM programme must respond to the ethos of the particular organization's culture. Therefore, TRM should include a research phase where training developers learn how their training will integrate within the larger system.

After gathering organizational data through interview, survey and observation researchers should identify, analyse and discuss safety related *best practices* and methods of resistance to their adoption as a means to understanding the organization's safety culture. Analysis of archival documents evaluating systemic trends in safety related accidents and other incidents is also important to understanding the wider culture and mind-set of training participants. Using data gathered during the research phase, a TRM programme specifically tailored to the needs of the organization can then be developed.

### Respect linear thinking

Most professionals in high-risk fields have completed extensive technical training and assessment programmes, both at the beginning of their careers and periodically throughout, in which competencies closely linked to job performance are evaluated. For example, airline pilots have annual checks in flight simulators, military officers engage in field exercises and inspections, and many law enforcement professionals demonstrate weapon prowess on the firing range. These are important job competencies.

Yet, this technical emphasis can reinforce that there is only one correct formulaic response to all problems and a specific set of demonstrable skills individuals should use to address them. Unfortunately, this is not always the case. Some problems require innovation, creativity and collaboration, not linear thinking. As evidenced in the Eastern Airlines crash in the Florida Everglades, at least one crew member must always have a sense of the bigger picture and not become overly fixated on the task. Conversely, at least one crew member needs to manage the primary task and not become overly concerned with the wider system.[3]

High-risk professions often attract linear thinkers who are comfortable with formulaic responses, further reinforced through technical training. As a result, developers of TRM programmes should recognize and respect that it may be difficult initially for some participants to think outside the linear ways to which they are accustomed. For some participants, urging them to evaluate authority dynamics and covert group processes is akin to asking them to translate an unfamiliar foreign language.

This is not to say that strongly orientated linear thinkers cannot benefit from TRM programmes. On the contrary, they can if training developers pace events so as not to alienate these participants or leave them overburdened with what Miller (1989) called 'awkwardly shaped lumps of undigested experience' (p. 25).

### Make it accessible and relevant

One way to keep technically-minded, linear-thinking professionals engaged in TRM is to make the training accessible and relevant to participants. This can be accomplished a number of ways. First, consider recruiting respected staff from within the organization as consultants in the training programme. This builds trust and develops a natural buy-in to the legitimacy of the event. Second, include real issues the organization is currently grappling with and well known examples of

safety violations from the organization's past. Third, keep the training concepts simple and jargon free. Professionals in technical fields are often suspicious of psychological concepts and overly theoretical discussions. Even if they initially feel TRM is valuable, research has shown that if participants are not able to make a clear connection to application in their daily work life, training quickly loses relevance (Oser *et al.*, 2001).

### *Meet participants where they are*

To be effective, a Tavistock-method consultant offers opportunities for member learning by staying in role and managing the boundaries of time, task and territory (Miller, 1989; Rice, 1965). Less concerned with social civilities, the consultant confronts the group, without affronting its members, in order to draw attention to group – not individual – behaviours (Rice, 1965; Banet and Hayden, 1977).

In this role, the consultant uses his or her own experiences and observations to make sense of what is going on, in order to offer hypotheses based on their understanding. Rice (1965) noted, 'If the staff cannot learn from experience of their own interpersonal and intergroup relationships, then it is unlikely that they will be able to help the member to learn from theirs' (p. 150). Therefore, for Tavistock-method consultants to be effective in TRM they must not only 'stick to the task and role' (Miller, 1989, p. 13) they must role model the *learning struggle* they are urging for participants.

### *Pay attention to anxiety*

Anxiety is ever present in organizations, especially high-hazard high-risk environments where mistakes can often lead to accident and death. This anxiety can trigger primitive fears that in turn lead to the creation of social defences and anxiety-relieving rituals (Fraher, 2004a; Gabriel, 1999; Hirshhorn, 1988; Jaques, 1952; Menzies, 1959). Gabriel (1999) noted 'successful organizations in [the] future will need members whose anxieties are confronted and worked through, rather than members who look for suitable scapegoats to victimize' (p. 225). A TRM training programme based on the Tavistock method can expose the group's use of anxieties and social defences in the context of a safe, contained environment, providing a controlled learning opportunity for event participants.

Rice (1965) emphasized how important it is that Tavistock-method consultants meet participants in their learning by demonstrating 'that they can contain and understand their own anxieties . . . and through

this provide opportunities for others to learn as well' (p. 45). He also noted, 'Since one cannot learn much about anxiety without becoming anxious, members of staff who are not made anxious at some points' in a Tavistock-based event 'are unlikely to be in close enough touch with what is happening . . . to fill their own roles adequately' (*ibid.*, p. 45).

### *Aim to effect systemic change*

Although training is important, effecting systemic change is the only way truly to enhance an organization's safety culture. Therefore, there needs to be systemic support for TRM and the perspectives to which it exposes trainees. Having central organizational leaders such as Chief Pilots, Fire Chiefs and Police Chiefs involved as role models is essential to TRM programme success. Participants must feel that rather than a training vaccination, TRM is an integrated programme supported by the wider organizational system.

### *It's not a group relations conference*

No training is a panacea. Although Tavistock theories and methods can inform many types of team training for groups operating in high-risk environments where authority dynamics are particularly influential, designing and consulting to events as if participants are attending a Tavistock *group relations conference* will usually end in disappointment. This is because of the peculiar design of the group relations conference.

A Tavistock-based group relations conference, like the Leicester Conference, for instance, is a particular learning environment designed as a social island where participants can experiment with taking up leadership roles within the temporary organization and its various sub-systems (Miller, 1989). The goal of the conference, therefore, is for participants to increase their understanding of 'the dynamics of leadership and authority relations in groups' (Banet and Hayden, 1977, p. 156) and apply lessons learned to roles that they take in their own organizations and networks back home (Tavistock Institute, 2002, p. 2).

One reason why this two-week event works so well is that, as inhabitants of the social island, participants are free to experiment in relative safety without fear of losing their job, forfeiting promotion or ruining their professional reputation. In most cases, participants will never see fellow Leicester Conference members after the event concludes. Unlike Leicester, most team training is done either within organizations or professional networks where individuals do have a high level of concern about professional reputation. Although some

aspects of group relations conference design, such as large and small study groups, can be exported successfully, expecting participants to engage in the event with the same manner of abandon as a Tavistock conference is unrealistic.

## CONCLUDING THOUGHTS

Recent research about organizational disaster has introduced analysis of *team learning*, anxiety and stress management during the *incubation period* as a field of study. Yet, most team training models still focus on prevention through an individual error model, rooted in the out-moded disaster analysis that focused on the 'well-meaning' and 'generally competent' individual and his or her 'single-flawed decision' as the key to understanding disaster. Just as methods for analysis of organizational disaster have matured to include *performance breakdown* and *team learning*, it is now time to embrace a more holistic approach to high-risk team training.

By providing one of the first CRM training programmes as a model, based on NTL's sensitivity training and their own personality measurements, Blake and Mouton fundamentally shaped the early years of CRM training. Their influence continues to be felt throughout the resource management field and personality measures remain a popular part of many CRM training programmes. Easily reproduced, statistically valid and reliable, these measures satisfy fantasies that if the right personalities have been identified and grouped together, the team will be effective.

Yet, such approaches ignore the fact that people behave differently in different groups and team dynamics often move in unpredictably complex – not reliably linear – ways. As a result, increasing people's awareness of these often covert, complex authority and group phenomena, rather than providing a snapshot of one's personal *managerial style*, remains essential to the development of leaders who can address the challenges of today's dynamic new operating environments.

Recent developments in the field indicate a shift away from CRM training, focused on cognitive knowledge and leadership training, towards more clearly observable, and therefore measurable, error management behaviours (Helmreich *et al.*, 1999). This shift will increase receptivity of CRM concepts within the field of aviation and other technical, high-risk industries.

However, I contend that CRM should not be thought of simply as a formulaic error management strategy, but as an *emotional intelligence philosophy* that includes both leadership training and error manage-ment strategies designed to help employees in high-risk industries

understand the dynamics of authority and learn to think critically. What is needed are team training programmes based on an understanding of the complex impact of individual psychology, group dynamics, and systemic influences on team behaviour in high-hazard, high-reliability industries. This paper has offered one way forward in this endeavor.

*Notes*

1. A draft of this article entitled '"Training to be Selected": Establishing the Case for a New *Crew Resource Management* Pedagogy' was presented at The International Society for the Psychoanalytic Study of Organizations (ISPSO) Symposium, Baltimore, Maryland, June 17–19, 2005.
2. Interestingly, Blake attended one of the NTL's first human laboratories held in Bethel, Maine in 1949 while on a Fulbright Scholarship at the Tavistock Clinic in London, quickly arranging to spend his next summer in Maine; thus beginning a ten year connection with NTL as Bethel faculty and board member.
3. Thanks to Karen Izod for this important observation.

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