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## Crew Resource Management is Still Flourishing in a Challenging Aviation Environment

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## FORUM

***CREW RESOURCE MANAGEMENT IS STILL FLOURISHING  
IN A CHANGING AVIATION ENVIRONMENT***

Leslie Gibson

CRM is alive and well. It has grown from an obscure concept - when even pilots had to ask what the initials represented - to a universally recognized model that plays a substantial role in military, airline, and corporate flight training and evaluative procedures. This growth has occurred over nearly three decades, and the time factor is significant in enabling its advancement by building upon earlier concepts, measuring its effectiveness, and adapting better strategies to suit changing environments. Its development and flexibility are aptly represented by the alteration of its name, expanding the meaning of the "C" to signify all "Crew" involved in a flight, rather than limiting it solely to human resources in the "Cockpit."

Part of the value of CRM, now that it is considered to have undergone several generations of evolution, is the recognition of the name: CRM. The term has become so successful, in fact, that the human factors element of the concept has been borrowed by the business world by modifying the acronym to apply to Customer Relationship Management. This new version of CRM is now an industry standard, with CRM being commonly taught in business schools and seminars, and software programs being touted widely on the internet. The acronym has also been adapted by several other professional disciplines as Crisis Resource Management: examples include medicine (particularly anesthesiology); offshore oil production; fire fighting, and railroad transportation.

But the original theory behind CRM as developed by NASA to reduce human error in the aviation field is an ever growing force. It has largely overcome the objections and resistance to change that a new initiative is likely to encounter when it is first introduced, and it is now subject to the respect and veneration often accorded an idea that has survived scrutiny over the long term. The passage of time, then, has worked in support of CRM by allowing it to be improved and to attain greater acceptance. Far from the notion that it might be waning as a tired, hackneyed idea, the passing of the years has allowed for the collection of mounting evidence in its favor that cannot be ignored or refuted.

The need to counteract the commonly cited 80% rate of human error factor in aviation accidents is obvious. The role that CRM has played since its inception in 1979 has been strongly evidenced by its industry-wide, global implementation, and by its widely recognized measures of

success. Any suggestion that it has outlived its time is ludicrous, at best. Indeed, the people who have figured significantly in the assessment of CRM as an increasingly effective technique for fostering successful collaboration in flight scenarios have enabled us to see its unequivocal value in a variety of ways. Military and commercial civilian flying in the United States currently mandate CRM training, giving further credence to the broad recognition of its merit.

One of the most prominent and respected researchers on CRM from its inception through current times is Robert L. Helmreich, Director of the NASA and FAA sponsored Aerospace Crew Research Project at the University of Texas at Austin who says blatantly in an article addressing criticism of CRM, "Nonetheless, the charge that CRM has failed is patently absurd and reflects a lack of understanding of human nature and of the role of CRM in organizations." On another occasion he stated, "...the rationale for human factors training is as strong now as it was when the term CRM was first coined." Helmreich writes from the position of one who is intimately familiar with the scope of CRM's effects having conducted scientific evaluations of its efficacy in the aviation field throughout the span of many years.

The metaphor comparing CRM to war is not new with the Marine inspired Global War on Error project, so it would be inappropriate to view it as a current movement that threatens to replace CRM. Helmreich, for one, had used the image years ago in writing about a series of "battles fought" in the history of CRM's efforts to institute significant programs to combat the inordinately high level of human factor error in aviation accidents. Trendy lingo

### *Crew Resource Management is Still Flourishing*

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and terminology comes and goes, but the need for universal and timeless basic tenets for combatting the tendency for error remains intact. Areas that are being developed under the auspices of CRM address improvements in multi-tasking; coping with long-term flight operations; fostering cross-cultural communications; and other tasks that are made necessary by an increasingly complex flight environment. Such innovative work being conducted in the field indicates the vigorous, ongoing growth of CRM.

There is some healthy debate about the need to upgrade CRM beyond the generally constructive reactions to training and enhanced learning that result in positive attitudinal and behavioral changes in the cockpit. There is a call for a stronger emphasis on implementing and measuring a more solid correlation between CRM training and increased safety in flight. This goal, after all, is the original purpose of CRM training, and although it may have been effective, there have been few conclusive means of gathering evidence to prove that safety has been enhanced. Accident rates attributed to human error do not appear to have changed, so the relationship of training to safety continues to be evaluated on a subjective basis. It is still widely viewed as an impressive tool, and collaborative efforts are being made to raise standards and make assessments that will strengthen its effectiveness

throughout the industry.

At the recent CRM Symposium conducted by Embry-Riddle Aeronautical University in February 2007, the continuing significance of CRM was manifest not only by the attendance of over 70 academic, military, and corporate representatives of top level management, but by their enthusiasm and the cutting edge level of their discussions of their work in the field. Multi-national representatives included a striking diversity of culture, age, and experience, and yet they were amenable in many regards, including a unanimous agreement on the importance of CRM to the industry. By overwhelming consensus, it was determined that this should be an ongoing annual event to foster the standardization and progress of CRM in the future.

Just as we have seen a marked progression of development of CRM in the past, few would claim that the evolution of CRM is finished. Particularly in view of rampant changes in the industry, a new generation of CRM proponents is working to ensure compatibility with multi-cultural influences and the rapid growth of industry technology. CRM continues to pose and meet stimulating challenges in all branches of aviation, and as long as there continues to be a propensity for human error, "Long live CRM."→

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