

# The road to academic 'critical mass'

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## The beginning

In the latter half of the 1980s I received a fateful phone call from one of the senior staff members of the Royal Netherlands Air Force Staff College asking if he could send one of his new instructors to Air University for a short, intensive course of instruction on military and airpower theory and airpower history. The colonel went on to say that his intent was to strengthen the Staff College curriculum in those areas, but a core of faculty academic expertise in those areas was largely missing.

Borrowing terms from the nuclear science, I suggested the need was to create an intellectual 'critical mass', thus suggesting an academically gifted group of officers large enough to symbiotically generate new ideas and new approaches to airpower problems – a kind of intellectual 'chain reaction'.

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Achieving this end would certainly enrich their ability to teach at the Staff College. Perhaps more importantly, the critical mass and chain reaction would spur many of the group to continue their academic pursuits by researching, writing, and publishing their findings and ideas. In doing so, they would inspire others to get involved in serious academic studies, thus continuing the intellectual chain reaction.

The colonel agreed, and it was not long before the first RNLAF Staff College instructor was on his way to Air University for a highly concentrated course of instruction – a whirlwind tour of theory and history. That first RNLAF instructor was Jan F.W. van Angeren, who was at that time a major. He endured (the only word to describe his mind-numbing experience) a very strenuous six-week curriculum that we had quickly put together at Air University. His experience made it abundantly clear that if more RNLAF instructors were to follow in his footsteps we would have to restructure and lengthen the course considerably.

## A unique reading course

In the succeeding fourteen years, five more Royal Netherlands Air Force officers followed in Van Angeren's footsteps. They arrived every two to three years, and each studied at Air University for 12-15 months. Their restructured course of instruction was a unique one-on-one tutored reading

course specifically designed to be of value for teaching in what is now part of the Netherlands Defense College.

Although each student had his own tailored curriculum, the principal foci of the curricula for all of the instructors were modern military and airpower history, airpower theory, and the political and economic context of war.

During the year they read, analyzed, and reported on forty to fifty major books and at least twice that number of articles from scholarly journals. Further, they attended two mini-courses within the broader curriculum. The first of these mini-courses concentrated on the Clausewitzian philosophy of war, while the second examined the logic of coercion and the use of coercive airpower. Throughout the year they wrote at least six significant research papers and attended one-on-one seminars with the overall course director. Finally, they were encouraged to attend the annual meetings of several academic societies that deal with military affairs.

## Passing on the knowledge

Each of the RNLAF instructors who attended the course had a very busy and enriching experience. Over time they became somewhat of a 'brotherhood' bound together by their com-

mon academic education and the rewards of being chosen to pass on their knowledge to RNLAf officers in the classrooms of the Defense College.

The reader will find articles written by colonel Van Angeren and all of the members of the brotherhood gracing the pages of this issue *Military Spectator*. The appearance of all these articles is very gratifying to me because it has been my honor to be the course director since its beginning, and to be the principal tutor in the course since 1992.

However, the appearance of these articles has greater significance because they provide excellent evidence that the long-sought academic 'critical mass' in the RNLAf has come to fruition.

### **The chain reaction**

But what about the 'chain reaction' that should follow the formation of a 'critical mass?' From my distant vantage point across the Atlantic, it appears that the 'chain reaction' is well underway.

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More importantly,  
the 'chain reaction' appears  
to be growing and appears  
to be providing a significant  
and beneficial impact  
on the RNLAf.

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Note, for example, the continuing series of international scholarly conferences sponsored by the RNLAf beginning in the mid-1990s.

Members of the 'brotherhood' played seminal roles in developing, planning and executing these conferences. They consistently gathered noted international scholars of military affairs from throughout the world who delivered major research papers on topics of great importance to airmen. These conferences have added



significant luster to the professional reputation of the RNLAf and to the academic reputation of the Netherlands Defense College, which generally hosted the conferences.

#### **Important links**

Although these conferences have been important links in the 'chain reaction', the most important links were forged in the Defense College classrooms. Each new member of the brotherhood returned to The Netherlands, after 12-15 months of arduous study in the United States, full of confidence and enthusiasm.

Each in his own way set about changing and improving the airpower curriculum at the Defense College to include a great deal more military and airpower theory and airpower history.

As a group their primary objective was to produce a

curriculum that would spawn and develop critical thinking about airpower among their students.

Equally important, they brought their enthusiasm directly into the classroom and imbued it in new generations of students. And so it is that a 'chain reaction' builds and expands.

#### **Professional competence: experience**

But is an education in such subject matter important for air force officers? Is it as important as the *training* that typically permeates the curricula of staff colleges around the world? It seems to me that the answer to both of these questions is a resounding 'yes'. The reason such an education is so important is the overwhelming need to develop and nurture professional competence among air leaders. →

This, of course, begs the question about what the term 'professional competence' means, particularly in the airpower context. It is reasonably intuitive that what constitutes professional competence varies in proportion to responsibility and authority. At the lower levels of rank, appropriate professional competence may involve only mastery of certain physical skills and development of the requisite judgement to operate a combat aircraft safely and effectively. Developing professional competence at these lower levels of responsibility is primarily a function of training and field experience.

However, the demands of professional competence quickly expand far beyond such rudimentary requirements and continue to expand as an officer gains more responsibility and authority.

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At more senior levels, professional competence requires progressively broader and deeper understanding of airpower (vice aircraft) along with the increasing ability to analyze and evaluate complex and often conflicting ideas.

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Further, senior leaders must be able to synthesize appropriate approaches to unique problems under conditions of imperfect information.

#### Experience as the ultimate teacher

Common sense tells us that experience is the ultimate teacher and thus the ultimate provider of professional competence at these more senior levels. Experience tests and tempers mind and body and is thus crucial to the development of mature judgment. Experience provides exposure to leadership role models, both successful and unsuccessful, in a variety of situations.

Not surprisingly, first-rate military organizations throughout the world

have spent much time and effort over the years attempting to provide their officers with the kinds of career patterns (experience) that would most likely build broad professional competence.

In ideal circumstances, career paths would include line duties at the squadron level, staff positions at various levels, and assignments leading to command billets in increasingly large and complex organizations.

In the USAF there were once times when, because of a surplus of officers with an aeronautical rating, many flyers could receive career-broadening assignments into non-rated career fields – a program known as the 'rated supplement'. Unfortunately, times have changed and operational requirements have crippled the USAF's ability to put flying officers into positions that do not require an aeronautical rating.

#### Shortfalls of experience

No matter how well organized and managed it might be, experience has at least two major shortfalls as a teacher and provider of professional competence. The first and most obvious shortfall is that every airman's experience base is quite narrow in the grand scheme of things. Experience is limited to those things an individual has actually done, things and events actually seen, and people actually known or observed.

Experience is a 'first person singular' affair or it is not real experience.

Unfortunately, the relentless advance of time places quite narrow margins on the number and variety of first-person experiences available to an individual officer. Other barriers, such as the difficulty noted in the previous paragraph of rated personnel gaining experience in non-rated career fields further limit experience.

The second major shortfall of experience as the ultimate teacher and provider of professional competence is the lack of time and often the lack of inclination to reflect on personal experiences. The constant hubbub of daily activities, the demands of bureaucratic trivialities, the requirements of protocol along with many other aggravations of modern military life conspire against airmen who might otherwise adopt a deeply contemplative attitude toward their own experiences.

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This is unfortunate because experience without reflection is not very valuable in the process of developing professional competence.

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The Prussian soldier-king Frederick the Great was, perhaps, the most articulate proponent of reflection on and contemplation of one's experience. Frederick asked, 'What is the point of seeing if one only crams facts into his memory (...) what good is experience if it is not directed by reflection?' To drive the point home, he noted that:

*A mule who has carried a pack for ten campaigns (...) will be no better a tactician for it, and it must be confessed, to the disgrace of humanity, that many men grow old in an otherwise respectable profession without making any greater progress than this mule (...) They are never perplexed and will never know the causes of their triumphs and defeats.<sup>1</sup>*

#### Professional competence: education

Education is another crucial pillar in the development of professional competence.

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<sup>1</sup> *Frederick the Great on the Art of War*. Jay Luvaas, editor and translator. New York: The Free Press, 1966, p. 47.



**'Winged Defense, symbol of the Klu airpower-thinking**

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Education is unique in that it can help to offset the shortfalls of experience.

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In a sense, education is concentrated and distilled experience that can broaden an individual's necessarily narrow base of personal experience.

Education allows the student to take part vicariously in the experiences of others who lived in far different times and in far-off places. It also can provide the student with the understanding that many of those past experiences have modern, sometimes very current analogues.

In the American experience, a classic example of this phenomenon would be general Carl 'Tooey' Spaatz's

vehement arguments with general Dwight Eisenhower about the pre-D-Day diversion of heavy bombers from their strategic targets. This situation from 1944 had its modern facsimiles in the air operations centers in both operation Desert Storm and operation Allied Force.

In point of fact, there are very few (if any) modern-day military situations that do not have historical antecedents.

Understanding these antecedents can profitably inform our current thinking and decision process.

**Critical factors: the analysis and ...**  
Although it may seem anathema to some who read this short essay, it is true that education about an event can be superior in many ways to per-

sonal experience in the event. Education can and should present the 'God's eye view', looking at the event dispassionately from many viewpoints.

Detached from the exigencies of the event, education provides the luxury of time and calm for the student to dissect and analyze an experience. And as Frederick noted over two hundred years ago, it is the analysis of experience that is critically important to the development of great military leaders. The ability to analyze and learn from experience is what separates those who will be great leaders from those who will be 'occupied with trifling matters and rusted by gross ignorance'.<sup>2</sup>

#### **... critical thinking**

What function or functions beyond compensating for the shortfalls of experience should education perform in order to build professional competence?

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The most important function is to develop senior airpower leaders with the ability and inclination to think critically about airpower and warfare.

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Critical thinking, i.e., thinking characterized by careful analysis and reasoned judgment, is the sine qua non of the Clausewitzian mindset which is so crucial to the professional competency of senior airpower leaders.

Carl von Clausewitz, the Prussian military philosopher and interpreter of Napoleon, sought to explore the fundamental essence of war and to appreciate its vagaries. He came to understand that much in war depends upon what he called fog, friction, and chance, the factors that separate real war from war on paper. →

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<sup>2</sup> Jay Luvaas, op. cit., p. 47.

Clausewitz understood that in war there are no permanent answers to problems posed by the enemy because the enemy is a thinking and reacting being.

In short,  
Clausewitz understood  
that war is not a glorified  
engineering project.

Therefore the mind of a successful military leader must be agile and at the same time attuned to subtleties and nuances.<sup>3</sup>

### **The essence of airpower**

The Clausewitzian mindset with its emphasis on creativity and flexibility is especially important for senior-level airpower leaders. The essence of airpower, that quality which sets it apart from all other forms of military power, is the ability to apply great power quickly to any tangible target on the planet. In other words, the options for using airpower are virtually unlimited. Such unparalleled flexibility can only be fully exploited by airpower leaders with the agile and nuanced Clausewitzian mindset.<sup>4</sup>

Unfortunately, much of the early training most airmen undergo makes developing a Clausewitzian mindset problematic.

<sup>3</sup> For a brilliant exposition on Clausewitzian approach and its impact on airmen, see Colonel Thomas A. Fabyanic (USAF, Retired), 'War, Doctrine, and the Air War College: Some relationships and Implications for the US Air Force'. *Air University Review*, January-February 1986, p. 2-29.

<sup>4</sup> For a much more in-depth discussion of the essence of airpower, see the author's article 'The Essence of Aerospace Power: What Leaders Need to Know'. *Aerospace Power Journal*. Summer 2001, p. 23-31.

Flying military aircraft is a dangerous business, even in peacetime. Even small mistakes can quickly result in serious accidents and dead airmen. Thus learning to fly 'by the book' is essential for survival. There are very definite right ways and wrong ways of doing things in that dangerous environment, procedures tend to be black or white – rarely a shade of gray. This training, which dominates the early development of airmen, is not conducive to an agile and nuanced mindset.

Only superior education, delivered with skill and enthusiasm, can overcome these problems and prepare future senior leaders to successfully deal with the vagaries of real war and the unexpected actions of a clever adversary.

The need foreseen in the late 1980s has resulted in the creation of an academic 'critical mass' within the RNLAf, a brotherhood bound together by their rigorous education. Their accomplishments in the classroom educating future senior leaders have set in motion an important yet subtle 'chain reaction' that will redound favorably on the RNLAf. Their work beyond the classroom in senior command and staff positions has benefited both from the unique education they received and the brotherhood they form.

In sum, the foresight demonstrated by the RNLAf near the end of the first century of powered flight will surely continue to pay big dividends in the second century.