Cultivating

Joint Commanders

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The following essay was produced by Squadron Leader Nick Newman – a member of the Headquarters Strike Command 'Briefing and Co-ordination' Team – as a background briefing paper, prior to CINCSTC's recent visit to the RAAF Conference on 'Air Power and Joint Commanders'. It represents a consolidation of a broad range of contemporary military and academic papers on the general theme of 'Jointery' and is intended to provide a focus on the British approach to 'Cultivating Joint Commanders'.

The aim of this paper is to provide a perspective on the issues facing air forces as we consider our engagement in future Joint and Multinational operations, with a focus on the progress that Britain's Armed Forces are making with Joint integration. The debate concerning the application and command of air power has historically been influenced by a number of recurring themes; not least, those concerning the command and control debate – specifically, the relative merit of *centralised* versus *decentralised* control and execution; and of the *specialisation* versus *integration* of commanders. Also, the importance of timely and accurate *information*; and the problems associated with military *friction*. This paper will examine these issues briefly, in setting the framework within which Britain's Joint capability has evolved. However, it is also necessary to examine the unique strategic context of this evolution. In the last 18 years, Britain's Armed Forces have been involved in warfighting operations on five occasions, in three different theatres, from the Falkland Islands in 1982 (CORPORATE); the Gulf in 1991 (DESERT STORM) and 1998 (DESERT FOX); Bosnia in 1995 (DELIBERATE FORCE); and Kosovo in 1999 (ALLIED FORCE). Set against this backdrop of extensive Joint and multinational operational experience, it might be considered surprising that Britain's Permanent Joint Headquarters (PJHQ) has only existed for four years and many of our Joint formations have stood up only since the 1998 Strategic Defence Review (SDR). However, this offers a clear illustration of the hurdles that have to be overcome in achieving a truly Joint capability, when set against the inevitable financial and resource constraints and the inertia inherent in our historical single-Service ethos and training.

Having set the conceptual framework and strategic context for Britain's emerging Joint Force concept, this paper explores the means by which we endeavour to cultivate the Joint Commanders who will lead these new formations. It explores the two key mechanisms by which we have sought to promote a change in *culture* in Britain's Armed Forces: first, by building an *environment* that supports Joint Commanders; and second, the provision of jointly-focussed *training*. In concluding, the paper examines some of the emerging challenges our Joint commanders will face as we continue to embrace 'Jointery', particularly the pursuit of even greater integration – both in terms of command & control structures and mission support infrastructure; and the challenges associated with information fusion and management, as we attempt to overcome the hazard of 'data deluge' in an era of battlefield digitisation.

CONCEPTUAL FRAMEWORK: DEFINITION/RECURRING THEMES

The British definition of the term 'Jointery', recently proposed by the Joint Services Command and Staff College (JSCSC) Joint Doctrine Team, is that:

> 'Jointery encapsulates the ways and means by which military forces enhance joint operations, effectively synchronising the activities of sea, land and air, invariably as part of a multinational force, allowing each to play to its particular strengths.'

The definition is drawn from a recent JSCSC paper which examines the qualities and capabilities required of 'Joint' officers.[1] This argues that the officers who function in the Joint arena must harness the capabilities of each Service, whilst adding value from their own single-Service experience, in order to contribute effectively to the joint endeavour; thus, the JSCSC do not consider that the 'Joint Officer' (in the purest sense) exists. Rather, the term 'Joint' is used to define the necessary attitude of mind and attributes required by single-Service officers employed in joint appointments. These officers need to understand the different capabilities, limitations, characteristics and traditions of each Service and that command is exercised in different ways to account for the tactics, techniques and procedures germane to each operating environment. For example when giving direction, the Joint commander needs to recognise that the necessary degree of delegation varies between components. In the land environment, the use of initiative right down to the lowest levels of the chain of command is vital in order to overcome the effects of friction. The air component, on the other hand, functions on the basis of 'centralised command and de-centralised execution' which permits unified air action and ensures that scarce resources are employed in the most effective way. This maxim has been a central theme of the history of air power and suggests that command and control should not be devolved to a lower level than that to which the commander has the ability to communicate his guidance, intent and mission directives to lower formations.

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The issue of aerospace command and control is simply one aspect of the general problem of controlling powerful assets in war. This problem involves two fundamental and related choices – between centralisation and decentralisation, and between specialisation and integration. The long-standing preference for air theorists, faced with this command and control dilemma, has been for specialisation and centralisation[2] and Sabin offers the following explanation:

> 'Centralisation has the advantage that scarce assets may be focussed at the decisive point rather than frittered away in penny packets, while decentralisation has the advantage that it is easier for the assets to respond quickly to threats and opportunities at the local level. Specialisation encourages commanders to develop the 'vision' to employ the assets to best strategic effect, while integration makes it easier to co-ordinate the employment of assets with the use of other arms within the same command and control structure.'

Current British Air Power Doctrine confirms that today's 'Joint command' demands the application of four principles: centralised control; centralised planning; the exercise of control at the highest practical level; and decentralised execution.[3]

The effective command and control of military forces depends on the processing of information faster than an opponent. The effective application of air power is dominated by the need to obtain and exploit high quality information quickly if the decision/action cycle is to remain within that of the opponent. The greater the degree of centralisation, the more it is necessary to ensure that the commander 'at the top' is not only blessed with timely and accurate information, but also with the quality of judgement to use that information effectively. This is no easy matter with implications for the selection and training of senior commanders.

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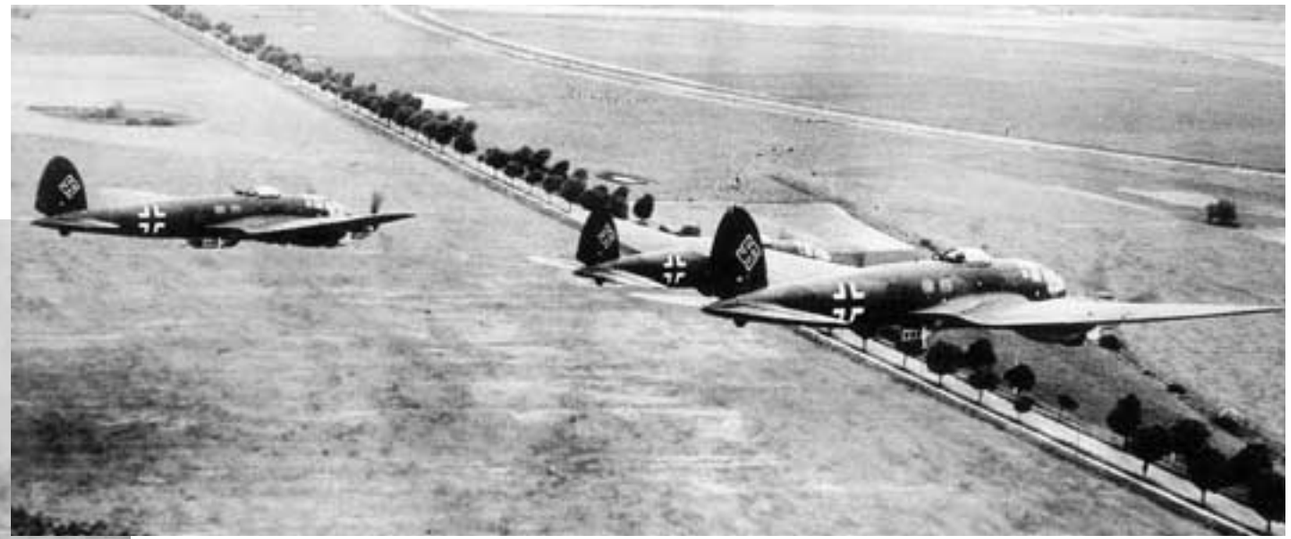
Without the right training, and an effectively integrated environment, we encounter the problem of military *friction* – an experience that was, perhaps, most apparent during the early United Nations operations in Bosnia. If the advantages offered by jointery (or, in this case, multinationality) are greater than the military friction it brings with it, then all is well. However, as the former Joint Commander of British Forces in Kosovo observes, the single-Service capital invested in terms like 'operational command' (OPCOM) take a lot of overturning:

> "All too easily, disputes can degenerate into a new command lexicon of '*Op Can*' (the '*will do*' approach), '*Op Can't*', '*Op Won't*' and '*Op Yours!*'."[4]

It is self-evident that the more joint forces can train and exercise together, the less will be the friction they will encounter. Friction occurs in all types of military operations and it is a key role of commanders to ensure – particularly in coalition operations – that the friction generated does not become a vulnerability or weakness for the enemy to exploit.

STRATEGIC CONTEXT



It is a popular misconception that the 'Joint' integration of air power with surface forces is a largely post-Cold War phenomenon; and yet, perhaps the most striking historical example of the success of such co-operation is the German tactic of *Blitzkrieg* – based on well-integrated combined arms operations. However,

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an examination of Britain's more recent experiences indicates that both the UK and Argentina encountered numerous difficulties during the Falklands War as a result of inappropriate command and control structures.[5] Neither side had adequately defined the nature of the relationship between military and political authorities nor had they determined the extent to which political involvement in the establishment of military priorities is considered appropriate or just meddlesome. Similarly neither the UK nor Argentina had effectively resolved the mechanisms for ensuring '*horizontal*' integration of the forces, within the theatre, so that the objectives of the single-service or component commanders reinforced the process of achieving, rather than hindering, the mission. Sea, land and air warfare depends on the blend of theory, technology and practice and, by the Gulf War, the *theory* and *practice* were in balance with the *technology* element. However, whilst technology appeared to be finally catching up with the vision that air power would fundamentally change the nature of warfare, Erskine notes that its advancement was restricted because our joint and combined doctrine had not kept pace with this development.[6]

We should not underestimate the single-Service inertia that has to be overcome in embracing a truly joint philosophy, illustrated clearly by the following distinct perspectives of the role of air power during the 1991 Gulf conflict:

> *'Desert Storm consisted of a 43-day air campaign, capped by a 100-hour offensive. Air power destroyed Iraq's C2 system in the first day of the war. The air campaign then closed down the supply routes, kept the Iraqi air force out of action for the duration of the conflict, destroyed a high percentage of the enemy's armour and induced mass desertions. Moreover, these results were achieved with low casualties and with limited collateral damage in civilian areas around the targets that were struck.'*[7]

While most airmen would consider that this offers a fair and balanced assessment of the central contribution of air power, the following analysis (by a former CinC of the US Army Europe) offers a somewhat less 'air-centric' perspective:

'The recent air campaign against the Iraqi forces gained not a single one of the US or UN objectives in the Persian Gulf War. Four days of land combat, aided immeasurably by the air campaign, achieved every goal and victory.'[8]

In seeking to overcome this inertia, the solution may lie in a focus on the various different joint campaigns, rather than on the old categories of air, land and sea power – although there is a continuing need to address ourselves to the distinctive role of aerospace vehicles within this new Joint perspective.[9] The British approach has focussed on the creation of Joint Structures and Training – based on the maxims '*Organise as we intend to operate*' and '*train as we intend to fight*'.[10] Structures must be designed to deliver the optimum capability in the most efficient manner while training objectives, from cradle to grave, must be carefully selected to maximise our capability output, in relation to the identified requirement.

DEVELOPMENT OF JOINT ENVIRONMENT

The rationale behind the drive for greater integration is improved synergy: whatever balance of aerospace and surface assets is appropriate in a particular joint campaign, the objective is to ensure that the combination is a synergistic one. However, 'synergy' can become an overused concept, especially in joint operations, and it is all too easy to assume that *any* combination of forces is necessarily beneficial and synergistic. Sabin defines synergy as the interaction between air and surface force components to produce joint combat power which is greater than the sum of the combat power which can be brought to bear by each individual component – and this only happens if specific mechanisms come into play.[11] Without these mechanisms, one has mere complementarity, with the effect of the two forces being additive. It is even possible that the two forces may interfere with one another and have an overall effect which is less than the sum of their individual parts. An obvious example would be the initial operations in Bosnia, when the coercive potential of NATO air power was offset by the reciprocal vulnerability of UN ground forces to hostage-taking. Thus, not all combinations of forces are necessarily beneficial and joint commanders and planners must be trained to optimise the force mix to ensure that air and surface force assets can interact synergistically.

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According to Sabin, the key is to co-ordinate air and surface planning, and to think through synergistic mechanisms in each particular case, while also being alive to the contrary possibilities of interference. Sometimes it may be better to let one type of force handle the

mission on its own – for example by relying on long-range air and missile strikes guided by satellite intelligence, rather than placing surface forces in harm's way. In the more common cases, where joint engagement is appropriate, the benefits must be maximised by proper co-ordination: for example, by having both air and surface forces concentrate first on winning the air battle so that they can then both turn to winning the surface battle (as in the Lebanon in 1982).[12] The need to maximise the co-ordination of assets in order to achieve the greatest synergy raises the vexed question of how the aerospace components of joint forces are best handled in terms of command and control. The different philosophies have produced certain tensions over the ownership and employment of particular air assets – as illustrated by the debates in Britain regarding the support helicopter force and the doctrinal consequences of acquiring Apache attack helicopters – and the problems of each service running its own air war became evident in Vietnam, when control of the US air effort was disastrously fragmented.

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British command structures tackled this range of problems relatively recently with the impetus for the formation of both the PJHQ and the JSCSC derived from the previous Government's 'Defence Costs Study' review in 1994. The 'Joint Commander' model emerged towards the end of the 1980s, and was employed in the Gulf War, but it is apparent that Britain lacked the permanent structures to realise this emerging

doctrine until the formation of the PJHQ in 1996. The PJHQ assists the nominated Jt Cdr in framing his requirements and beginning the campaign planning process, while the Joint Task Force Commander (JTFC) delegates command and control of the land, sea and air environments to component commanders. For the air environment, this is the Joint Force Air Component Commander (JFACC), who may exercise command afloat in an appropriately equipped and staffed C2 vessel; ashore in a rear area; forward 'in-theatre'; or, ultimately, even airborne in a suitably configured aircraft. The location will depend on the scenario and the position of the main effort within the campaign, but there may be practical advantages for the JFACC to co-locate with the JTFC.[13] The flexibility and multi-role versatility of air power platforms means that a JFACC could be supporting more than one commander and may be a 'supported' commander at the same time. Depending on the context, the JFACC may wish to devolve the detailed tasking of certain missions to lower-levels of organisation, such as that of a deployed wing or squadron. No single model will work for all scales of operation and for all scenarios; therefore, the JFACC model may have to be modified to suit the circumstances.

Initially, Britain's expeditionary capability was based on the 'Joint Rapid Deployment Force' (JRDF), but the recent Defence Review identified a number of weaknesses with this concept; not least: the lack of any Joint *operational*-level doctrine; the fact that both 5 AB Bde and 3 Cdo Bde were considered too 'light' for the task; Joint training was slow to materialise; the formation suffered from poor sustainability (highlighted during Bosnia deployment); there was an inadequate air and maritime strategic lift capability; and we failed to achieve a fully resourced standing Joint Force or JFAC Headquarters (JFHQ/JFAC HQ).[14]

Nevertheless, our capability took a great stride forward with the publication of the SDR, at the heart of which was a series of 'Joint' initiatives – many of which have since been tested successfully in Kosovo. These included the transfer of the RAF's Support Helicopters to the Joint Helicopter Command; the co-location of the RAF Harrier GR7 and Royal Navy Sea-Harrier forces to create 'Joint Force Harrier'; the creation of a Joint NBC Defence Regiment and Joint Ground Based Air Defence training; the formation of a Joint Logistics Command; and the provision of the JSCSC and the Joint Doctrine and Concepts Centre (JDCC). However, central to the evolution of Joint forces was the identification of a pool of readily available, rapidly deployable, high capability force elements – from all three Services – to form the Joint Rapid Reaction Forces (JRRF). In drawing on the lessons of the JRDF, the JRRF concept was developed against an analysis of six key planning assumptions – Scale of Effort, Readiness, Concurrency, Endurance, Sustainability and Deployability – and offers significantly enhanced firepower, mobility and protection. The readiness profile for this force is illustrated at Figure 1 and the key additions

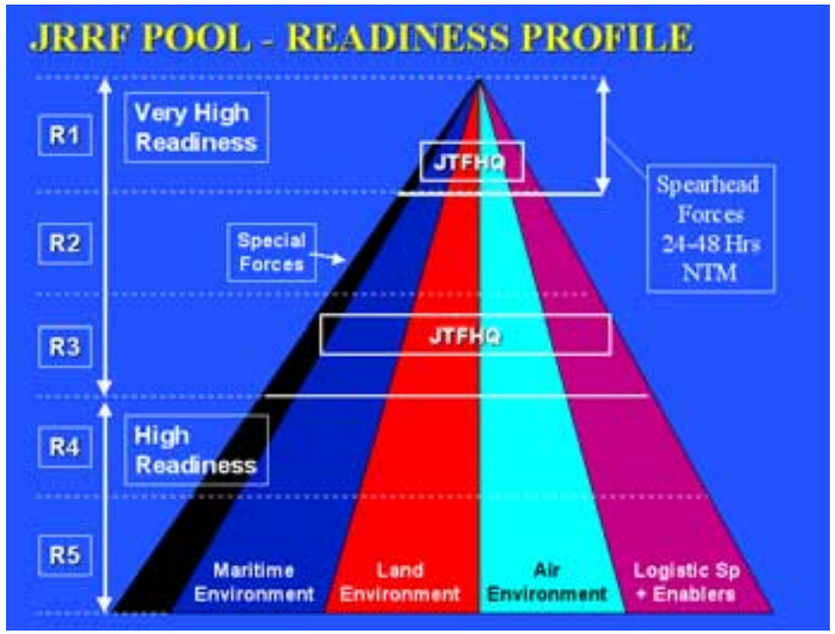

Figure 1

include an airmobile brigade (and, in due course, its successor air manoeuvre brigade); an armoured and a mechanised brigade; much larger and more capable maritime and air elements; special forces; a dedicated joint task force headquarters, properly manned, equipped and trained, together with the nucleus of a second such headquarters for concurrent operations; logistic, medical and other support to mount two concurrent operations; heavy lift aircraft and four further roll-on/roll-off container ships.[15]

In striving to achieve the effective integration of these assets, within the overall air-land and air-sea environments, the key challenge is to ensure that commanders at all levels, and of all types of forces, understand the overall shape of the aerospace battle; can see what mix of air and surface assets is appropriate; and how they must be co-ordinated to achieve maximum synergy.

DEVELOPMENT OF JOINT TRAINING

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Turning to Britain's Joint training mechanisms, the factors that influence our philosophy are driven, in large measure, by the current trends affecting the planning, conduct and command of operations. These include the expansion of the battlespace, which will lead to a volumetric increase in the information that is relevant to a commander. In turn, expanding battlespace will increase the demand for timely and accurate information – and lead to compressed decision/action cycles – in order to maintain the tempo of operations across a widely dispersed force. Achieving decisive synchronisation of operations in time, space and effect will remain complex – whilst much of the *control* and *communications* can be automated, *command* will remain predominantly a human activity. Whereas strategy is all about balancing ends, ways and means, the art of high command involves achieving some harmony between these elements and imposing a certain order on the inevitable chaos of war.[16]

This places considerable demands on joint commanders. There is a tendency to view this simply as a matter of synchronising components under an appointed JTFHQ; however, the range of factors that the joint commander needs to understand is extensive – and critical to their effectiveness is the degree to which they understand the nature of their fight, and the needs, capabilities and limitations of their temporarily 'task-grouped' forces. They also need to understand their potential regional – and non-military – allies, since Joint operations will almost invariably be combined; indeed, operational experience has shown that commitments will bring us into close contact with 'Other Government Departments' (OGD) and 'Non-Governmental Organisations' (NGOs), which now form a part of the operational landscape and must be within the joint commander's 'comfort zone'.

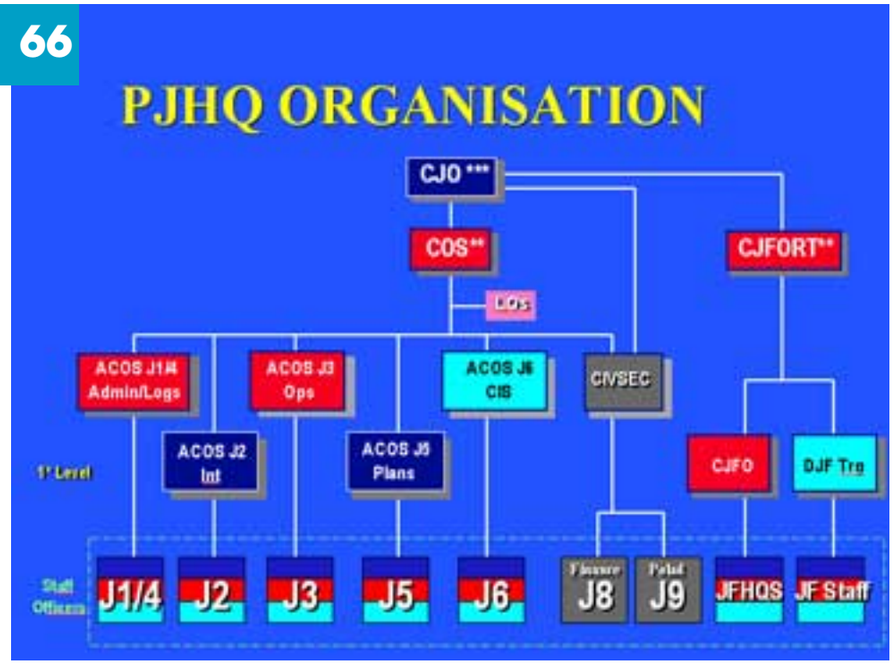

Figure 2

Joint commanders at the operational level require capable joint HQs which provide a training ground for joint staff and help to develop skills for commanding at that level. Modern warfare, and 'operations of choice' require joint task force HQs capable of deploying rapidly, and able to provide the core on which other HQs and commands can be built. The JFHQ provides that capability in UK and has recently been recognised as a necessary enhancement to PJHQ, containing within it all the J1-J9 functions *(see Figure 2)*. Such HQs also need their own strategic communications and 'life support'. Finally, an essential element of the modern joint commander is political awareness. They have to understand the political consequences of their actions, and the nuances of the operational situation.[17] The slide at Figure 3 is shown to prospective JTFCs during the Higher Command and Staff Course and, in the words of the Chief of Joint Force Operational Readiness and Training (CJFORT), '…it is intended to illustrate what is expected of them – in other words, how much they need training![18]

Within the PJHQ, CJFORT drives the requirements for training Britain's joint forces and, notwithstanding the title of the appointment, his responsibilities encompass both education and training. It is acknowledged that there is often some confusion over the two terms and his staff look at it this way: while they are happy for their teenaged daughters to get sex *education* at school, they are less happy for them to get sex *training*![19] The education package is developed in close consultation with the JSCSC and single-Service Warfare Centres, and encompasses Officers' Initial and Specialist Training; the Advanced and Higher Command and Staff Courses (ACSC/HCSC); and the Joint Warfare Courses. The ACSC is a critical first stage in cultivating staff with an appreciation of the strengths and characteristics of the other arms, while HCSC enhances the operational level and widens the joint command challenges. Training is designed to focus on specific operational-level techniques and includes specific packages for potential JTFCs and National Component Commanders (NCCs), JF Component Commanders, and Component/JFHQ staff.

Figure 3

Figure 4

The mechanism whereby the commanders can learn and develop is provided by Joint Exercises. Training of specific Joint Force Commanders is critical to their cultivation and only by exposing them to the operational environment can they become comfortable in it. PJHQ runs JTFC workshops (run by CJFORT) to meet this need. Professional relationships cultivated on courses and exercises assist development of trust and the opportunity to discuss challenges and the Commander Joint Operations (CJO) has identified that lessons learned in a training environment are vital to preparing those who may need their skills under pressure, on operations.[20]

Education and training objectives are determined by the Joint Essential Task List (JETL)[21] which breaks out of Britain's 28 Core 'Military Tasks' into a hierarchy of joint tasks at the military strategic, operational and tactical levels. The RAF's 'Mission-Essential Tasks List (METL) has been developed to the operational level in parallel with the JETL. The relationship between JETs and METs is illustrated at Figure 4.

CJFORT has identified that the National exercise programme needs to be geared more precisely to specific training requirements (and *vice-versa*) and properly funded. Sound progress is being made, complicated by the time needed to discharge legacy commitments; to deconstruct and then reconstruct our exercise programme; and in all of this, one obstacle is the lack of a dedicated National training facility.[22] Looking to the future, there are plans to create a National Joint Command Training Centre (NJCTC) that can be opened up to the wider defence community to provide somewhere where commanders can train for joint – inter-agency – campaign planning, mission rehearsal, wargaming and operational analysis.[23]

Finally, this account of Britain's efforts to promote a Joint culture would be incomplete without a brief mention of the *moral component* to the drive for increased jointery – the 'sense of company'. Fighting spirit will derive from many things, but Servicemen and women will fight best alongside comrades in, and for, whom they have mutual trust, respect and confidence. Nevertheless, being 'joint' is not simply working alongside, or 'getting along well' with, the other Services. Nor does it mean the

acceptance of the lowest common denominator of agreement, or the simple espousal of joint doctrine. Indeed, due to the unique characteristics of each environment, it is dangerous to assume that the 'joint' officer is equally expert at sea, on the land and in the air – he is not. Joint expertise takes time to develop. It must first be nurtured at the tactical level, within a predominantly single Service environment, by encouraging younger officers to adopt an open minded approach that instinctively recognises the strengths and weaknesses of their own and the other Services. Officers selected for joint positions must, in addition to having the highest possible single Service professional knowledge, intrinsically understand the enduring nature and characteristics of conflict and the utility of military force at sea, on the land and in the air. He or she needs a flexible enquiring brain with the necessary intellect, breadth of vision and attitude of mind to grasp a wide range of complex issues involving elements of more than one Service. The 'joint' officer must have the maturity to deal with uncertainty, the authority to contribute meaningfully to the joint debate and the moral courage to deliver the finest possible operational or policy decision.[24]

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The need for a joint sense of company must not be underrated; indeed one need only recall the experiences of the US Special Operations Forces in DESERT ONE (the abortive mission to rescue US hostages from Tehran in 1980) and again in Grenada, in 1983, to understand the consequences of its deficiency. The following account of the Grenada incident, from the operations diary of the US 160th Special Operations Group – the 'Night Stalkers' – offers a salutary illustration:

> *'…Due to **chaotic planning** and **last minute inter-service bickering at senior levels**, [the assault group] would not leave until 0630, over 5 hours behind schedule. This meant that instead of racing into the objective unseen, under cover of darkness, the airmobile assault would take place in the stark light of the rising sun… Had the pre-assault intelligence of lightly-armed prison guards at the objective been correct, this situation may not have been as disastrous as it would prove to be.'*[25]

As we continue to embrace 'Jointery', Britain's Joint Commanders face a range of emerging challenges; not least from the pursuit of even greater integration, both in terms of command & control structures and mission support infrastructure. The objective is to move towards joint operations where one component might exploit – readily and knowledgeably – the capabilities of one, or more, others. This could involve one single component providing the principal JTF structure – it would provide the predominant or, potentially decisive, fighting element and the basis of the command and control mechanism, thus

offering the prospect of structural stability and deep operational comprehension. Future integration will also entail the thorough engagement of OGD – even NGOs and supranational agencies – into one coherent campaign plan. Moreover, whilst the training of Joint Commanders is proceeding apace, the opportunities for training our political masters and high-ranking civilian officials – for their role in the direction of, and interaction with, military officers at the Operational and Strategic level – should not be overlooked.

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Another area where greater integration is sought is in the 'Mission Support' arena. For joint air operations this must be consistent and coherent, so as to ensure compatibility and interoperability across forces, drawn from all 3 services and other coalition partners, and operating in multiple roles. The only practical way of achieving this is through strict configuration control using a single, centralised authority – in this case, the PJHQ or JTFHQ.[26]

Since intelligence data emanates from a whole host of sources, it must be collected, collated, fused, interpreted and disseminated, in a timely manner, to provide the vital information element of 'Integrated Mission Support' (IMS). For example, outputs from the intelligence, surveillance and reconnaissance assets of the three Component Commanders need to be combined by a single authority – at national and theatre levels – to build the joint operational picture (JOP). A staged process is called for, whereby the information derived from each environment should be fused under the authority of the relevant component commander before submission to the JTFHQ. For the RAF, the solution may lie in the creation of a 'national aerospace fusion centre', with deployable elements, to handle and combine the product of our aerospace ISTAR assets.[27]

This leads to the second challenge of information fusion and management. Radically improved capabilities in the field of information processing and communications systems have led some doctrine writers and military analysts to talk of '*perfect information*' for commanders, and 'information dominance'. However, whilst technology can enable military operations to be conducted more efficiently – with stand off weapon systems reducing the risk of casualties or collateral damage – risk *cannot* be eliminated. Commanders still have to lead – and act – upon their judgement and intuition, and exercise moral courage. Indeed, the volume of information being collected across a dispersed battlefield may potentially degrade the coherence of battlefield perception. In other words, internal friction and the 'fog of war' will continue to affect the quality of decision-making by a commander and the subsequent dissemination of orders arising from his decisions.[28] The improved information flows promised by digitisation may not necessarily enhance the quality of decision making; as the

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eminent strategist, Colin Gray, has argued persuasively: '…to *know many things is not necessarily to know what those things mean.*'[29]

'*Data deluge*' is another potential hazard; the right information must be passed to the right people at the right time. The range over which data must be passed will vary greatly – the 'reach back' concept, employed extensively by US forces, and increasingly by UK forces, can lead to communications distances of over 1,000 miles or more. On the other hand, however, real time 'sensor-to-shooter' requirements may call for links between airborne platforms in theatre over ranges of a few tens of miles.[30]

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The welcome and long overdue shift towards 'jointery' in Western military forces needs to be reinforced by a new tri-Service doctrinal framework organised more around different types of joint campaigns, and less around the increasingly problematic traditional categories of air, land and sea power. However, there will remain a need to consider the specific role of aerospace vehicles within and across these various campaigns. The aim must be to produce combinations of forces that produce synergy rather than interference. The machines, computers and communications of the information age can empower and assist, but they are unlikely to be a substitute for the study of military history, campaigns and operational art. The exercise of command remains a human function – military judgement, intuition, insight and moral courage remain as important to today's 'Joint Commanders' as they were to the Greeks and Romans.[31]

The success of jointery is recognising that land, sea and air power are co-equal and interdependent forces; neither is an auxiliary of the other. The Armed Forces will always need people schooled in their own type of warfare but who trust in each others' capabilities. A true Joint-Service perspective should eliminate any distrust, but careful control of all assets must be centralised, with specific command being exercised through the respective component commanders, if the inherent flexibility and ability to deliver decisive blows are to be fully exploited.

LIST OF FIGURES:

NOTES:

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20 Garnett, *op cit*.

21 JETL falls out of SDR Defence Missions and Military Tasks. PJHQ HCSC Presentation *op cit*., slide 40.

22 Delves, Maj Gen Cedric (CJFORT), Notes on progress with the preparation of the JRRF (March 2000).

23 PJHQ (2), *op cit*., slide 46.

24 JSCSC, *op cit*.

25 http://nightstalkers.com/urgent_fury/ (downloaded 31/3/00).

26 RAF Air Warfare Centre (2), *The provision of IMS to Joint Air Operations – An AWC Perspective*, (21 February 2000), 11.

27 *Ibid*., 8.

28 Melvin and Peach, *op cit*., 124-5.

29 *Ibid*., 132.

30 The 'reach-back' concept moves rearwards as much processing activity as is possible, so that the number of forces deployed is minimised, permanent facilities are fully exploited and central control is maintained over the processing of raw intelligence into information. This also promotes configuration control and the issue of a common operational picture, allows sensitive sources to be afforded adequate protection, and limits duplication of effort. Cited in RAF Air Warfare Centre (2) *op cit*., 9.

31 Melvin and Peach, *op cit*. 136-7.