

# **Non-technical interoperability: The challenge of command leadership in multinational operations**

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## Abstract

Interoperability in multinational forces generally refers to compatibility of hardware and software. Connectivity alone, however, does not confer capability and must be accompanied by interoperability of people, process, and organisation. A series of research studies has been conducted aiming to identify and understand non-technical factors that have the potential to impinge on optimal inter-working in multinational forces. This paper summarises the findings of a study that investigated command leadership in multinational forces. This work set out to investigate the challenges faced by senior commanders when tasked to lead personnel from other nations and to capture information as to how these challenges have been addressed in the past. 10 senior British military commanders with experience of multinational command were interviewed. Six of the participants held 1-star rank or above and all three services were represented. Issues raised included the frictions involved in balancing national political-strategic requirements with military effectiveness, the need to adapt command and leadership styles to the contingents under command, and the challenges of rapidly developing effective working relationships with national contingent commanders. A number of approaches to enhance the effectiveness of command are suggested including enhanced preparedness via education, career management, and training.

## Background

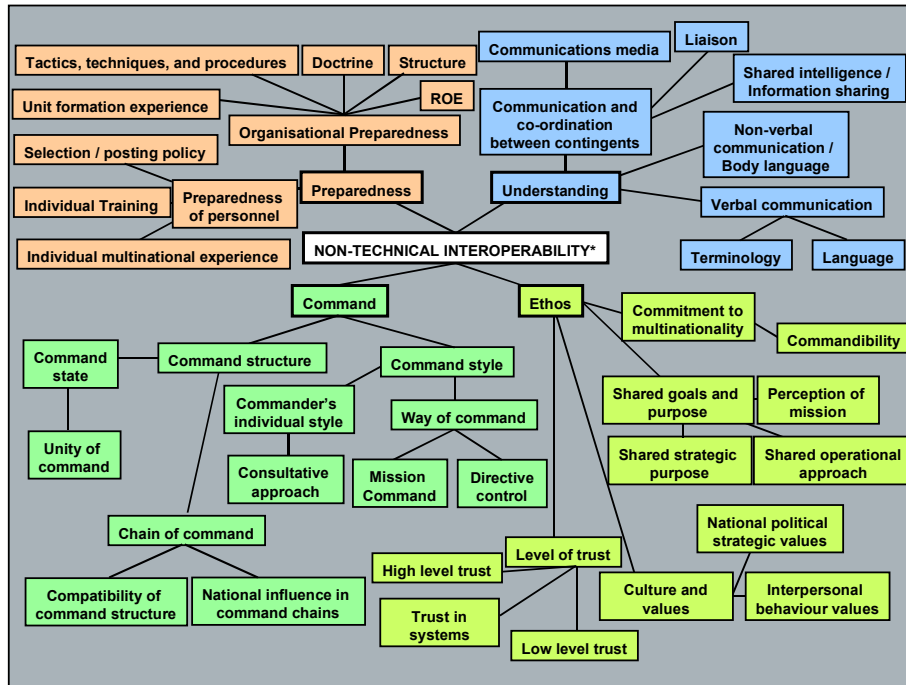
The period since 1990 has seen increasing attention paid to multinational military forces. Experiences in the Arabian Gulf and the former Yugoslavia have demonstrated the substantial strategic advantages to be gained through coalition and alliance operations. Operating in multinational forces is nothing new for the British Armed Forces. For example, as Connaughton [1] points out, as far back as the early Eighteenth Century, it was rare for the Duke of Marlborough to undertake a campaign with more than 50% of his forces drawn from the United Kingdom. It is interesting to note then, that recent commentators, for example Palin [2], have observed that multinational forces raise a new set of challenges for the military personnel involved. There are at least two reasons for this in the period since the end of the cold war. On the one hand, the level in the military hierarchy at which regular multinational interaction takes place has lowered. For example, the British Army of the Rhine would typically have co-ordinated with its allies at Corps or Division level. Nowadays, multinationality occurs *within* Brigades. In addition, there is the challenge of operating with unfamiliar nations. Compared to the certainties of the NATO alliance, where trust could be built over a number of years, the UK is likely to operate in *ad hoc* coalitions with non-traditional partners. Multinational commanders are likely to inherit ‘coalitions of the willing’, designed to meet political-strategic, rather than operational and tactical, requirements.

In order for an alliance or coalition to operate effectively, it is essential that national contingents can achieve as high a degree of interoperability as is possible. NATO doctrine stresses that interoperability is: “the ability of systems, units, or forces to provide services to and accept services from other systems, units, and forces and to use these services so exchanged to enable them to operate effectively together” [3]. Interoperability has generally been taken to imply the compatibility of different contingents’ military hardware and software, for example, weapons systems or communication and information systems. More recently, however, it has been recognised that this ‘technological interoperability’, while essential, cannot, in isolation, ensure the capability of the multinational force [4]. Connectivity alone does not confer capability. The command and control element of a military force can be characterised as a complex socio-technical system [5] where personnel, processes, procedures, and organisational structures interact with technology to deliver capability. Clearly, in an alliance or coalition environment, interoperability of technology must be accompanied by interoperability of people, process, and organisation in order that a combined military capability can be achieved. We have labelled these latter aspects ‘non-technical interoperability’ (NTI)<sup>1</sup>.

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<sup>1</sup> This term appears to have first been used by Clark and Moon [11].

**Related work.** In order to operate effectively in a multinational force, it is essential first to understand, and second, where possible, to intervene to mitigate factors with the potential to engender friction. In earlier studies funded under the UK MOD's Corporate and Applied Research Programmes we set out to develop a framework describing the factors that underpin NTI [6,7,8,9,10]. Based on an extensive literature review and over 50 interviews with experienced UK and foreign officers, a large body of information was generated relating to NTI. In the analysis stage of the work, the main factors that were identified in the review and surveys stages were overlaid onto the four basic attributes of DSTO's Organisational Interoperability Maturity model: Preparedness, Understanding, Command Style, and Ethos [Clark and Jones, 4]. The top level NTI framework is reproduced in Figure 1.



**Figure 1. The non-technical interoperability framework**

**Study aims.** In the course of our earlier studies it became clear that, although a great deal of information had been generated relating to non-technical frictions, little first-hand information had been collected relating to the challenges of commanding personnel from other nations. In part, this was a result of the relatively low rank of interviewees (generally Major / Lt Col or service equivalent). Only a few had ever experienced such command. Consequently, this study was undertaken specifically to identify the challenges involved in leading personnel from other nations and methods that previous commanders have employed to deal with those challenges. It is stressed that it is not an aim of this work to make value judgements or criticisms regarding different nations' approaches. Rather the purpose of the research is to identify sources of incompatibility with a view to raising awareness of these issues and, where possible, to make recommendations as to how they might better be managed.

**Method.** Data were collected via literature review and a survey study based on interviews. The literature review was used to inform the development of a semi-structured interview schedule. It was impressed upon interviewees that they should not feel constrained by the topics raised, but rather should raise any issue that they believed to be relevant. Interviews were conducted during the first half of 2004. Interviewees' comments were collated by the research team and categorised using

a qualitative thematic analysis technique. This analysis was performed both by the researchers who conducted the interviews and subsequently by an independent researcher (to enhance quality of representation).

**Interview study participants.** Ten senior British Commanders contributed to the study. Their Ranks ranged from Colonel to 4-star General (or service equivalent). Six of the interviewees held 1-star rank or above. All three services were represented, with the majority coming from the Army. Interviewees had a wide range of experience of multinational operations and most had both held a command and had been commanded in such an operation.

### **Command Challenges in Multinational Operations**

**External influences on the maintenance of military effectiveness.** One commander pointed out that: *“Quite a lot of people will tell you that multinationality is imperative, an absolute necessity..... the one thing that is not a matter for debate is mission success.....if multinationality is going to interfere with it being a success, it ceases to be an imperative.”* One of the key challenges commanders face is balancing the political-strategic requirement for multinationality with the practical requirement of achieving military success. Commanders identified a number of mechanisms through which multinationality might undermine military effectiveness. One example that was cited was ‘tempo drag’, a concept, previously discussed by Kiszely [12], that refers to difficulties with the generation and control of tempo that can occur as a result of the various frictions that are experienced in multinational operations.

Interviewees suggested that the decision to deploy multinational forces should be informed by contextual criteria including both political and military requirements of specific operations. An example cited was whether the mission required rapid deployment into a volatile environment, or was an enduring operation in semi-stable conditions. It was commented that in order to operate in a volatile environment a multinational force must have trained together previously and have established appropriate command structures and operational procedures, for example the ARRC. The implication is that potential frictions can be ironed out over time in a benign environment. Interviewees also voiced concerns at the relatively low level at which different nations’ forces are being integrated. It was noted that *“the latest thing is multinational battle groups.....lets not pretend it’s a good idea.....but it’s a necessary idea, for political reasons”*.

Relations with foreign contingents can be hampered by strategic decisions beyond the multinational force commander's control. A major challenge involves dealing with, and working within, the restrictions national governments can place on their contingents. Examples provided in the interviews included restrictions on disclosure of information and restrictive rules of engagement (ROE). For example, one interviewee pointed out that *“In order for a particular nation to leave the barracks, they required a written order from me, otherwise they wouldn’t go on patrol.....they were being leant upon by their political masters and their officers at home”*. One Commander stated that the possibility that national contingents under his command would be required to wield the “red card” was a constant threat to operational effectiveness.

**The Commander.** This theme focuses on factors that interviewees felt were essential to enabling individuals to be effective multinational commanders. This includes personal style and the ability to adapt it to meet the demands of different situations; experience of working with people from other cultures and the parent organisation’s efforts to promote competency in multinational command through education and training.

According to many of the interviewees, it is important for commanders to be able to adapt their command style to the requirements of the multinational force. It was stressed that, one element of command style adaptation involves a focus on achieving consensus. A number of interviewees expressed the need to command by persuasion rather than to dictate, and on occasion be prepared to compromise in the interests of operational success. *“In the international arena.....you may be right, but the way you phrase the argument, is critically important to winning the point. As people go up the rank scale I think they generally become more relaxed which is more conducive to working in the international arena”*. One individual pointed out his belief that an important art in multinational command is not asking something of a contingent commander that he would be forced to refuse. Clearly considerable work is required to achieve consensus within a multinational force and this is costly in terms of both time and effort particularly where several nations are involved.

All interviewees stressed the requirement to visit the multinational forces under their command at the earliest opportunity to build working relationships and to develop an understanding of how to command them most effectively in the future. One pointed out that if time was too short he would visit foreign units before British ones. Informal meetings and social gatherings with foreign contingent Commanders are an important command facilitator in multinational operations. Many interviewees referred to 'eating and drinking at the operational level'. This helps to establish a common objective and create goodwill amongst the multinational force, which, in turn, augments 'command cohesion' amongst the multinational contingents.

It was pointed out that multinational commanders need to take account of how their actions might impinge upon or be interpreted by foreigners under their command. By avoiding particular national sensitivities and achieving a sound understanding of their capabilities, commanders can achieve value for the multinational force and allow different contingents to contribute effectively. Although more than one of the interviewees commented that 'Leadership' and 'Command' are not the same thing, only one attempted to distinguish between the two explaining his belief that command is a defined state whereas leadership is based on individual style. He stressed that, like command style, leadership style must be tailored to those under command.

Knowledge gained via 'education' was highlighted as critical by interviewees for enabling effective command in multinational operations. Several interviewees specifically highlighted the role of staff college as a 'fundamental building block' in developing the ability to work with foreign nationals. Some of the participants mentioned the course content as being particularly useful, while others valued the opportunity it gave them to work alongside a cohort of international students. A number of interviewees pointed out that, in the future, officers are likely to be required to work with foreign contingents at earlier stages in their careers and consequently there is a need to provide them with experience to prepare for this. Multinational exercises were promoted as an effective way of contextualising experiences after staff college. One interviewee had previous experience of immersion training, where role-plays of operations with various nationalities were conducted. In one session he rehearsed a decision that he would later rely on in a real conflict. He recommended that this approach be more widely used.

**Organisational factors.** This theme relates to the ability of contingents to work collaboratively based on adaptation of command style, organisational processes and structure and mission context. Many interviewees stressed national differences in command philosophy. It was felt that, although the majority of nations that the UK operates with espouse some form of Mission Command, this was not always the case in practice. The consequent requirement to adopt a more 'centralised' approach when commanding foreign contingents had been found to lead to friction and a drag on decision making tempo. One interviewee had direct experience of this. *“...People sign up and say*

*we do mission command when they don't at all, and some of the nations in the coalition will have actually been brought up to the exact antithesis of mission command, which is command by detailed orders..... if you try and adopt a Mission Command style to command people who don't really understand it, or are uneasy with it, you are likely to have chaos. And so this leads coalitions, generally speaking, into command by detailed orders."*

It was suggested that authority to act is given at a much lower rank in UK Forces than in other contingents. For example, one interviewee expressed the opinion that, whilst UK Captains and Majors are given considerable decision-making autonomy, in some foreign contingents Lieutenant Colonel is the lowest rank where an individual can be treated as independent. Even then, it was suggested that these Lt Cols will regularly seek confirmation of their decisions from officers higher in the chain of command.

The size and complexity of the multinational organisation was cited by many as having a significant impact on the challenges inherent in command leadership. The general rule suggested by interviewees was that the fewer partners were involved, the less problematic the operation would be to command. Moreover, alliances were typically felt to be easier environments within which to exercise command than coalitions, especially where there was existing doctrine. Several interviewees had experienced difficulties in identifying key decision-makers and understanding the processes by which other military organisations make decisions. It was felt to be critical to identify decision-makers so they could be approached directly on important issues.

Liaison officers (LNOs) were felt to play a critical role in facilitating multinational command through enhancing the quality of awareness and communications between partners in the alliance or coalition. LNOs should be well briefed on the expectations of the role and the requirements of the commander and have a sound understanding of the Headquarters processes and mission priorities. One interviewee stressed the importance of the role: *"He is not just a Liaison Officer but also an ambassador of sorts. He's transmitting your standards, your approach, your intent, your willingness to learn, be understanding, and reasonable.....You've heard people say that if you're giving a Liaison Officer away and it isn't hurting you you've sent the wrong man. Well I think that is absolutely true."*

The importance and impact of Exchange Officers (EOs) was also stressed. An EO is less of an observer than an LNO having been assigned a specific job and role and assigned a desk with access (on the whole) to the Headquarters computer systems. Participants explained that EOs would typically be the 'first port of call' when initially working with a National Component Commander's Headquarters. Several interviewees recommended a more widespread use of EOs, allowing both sides a better understanding of the other's working processes and style. Moreover, unlike LNOs, the exchange would not result in a net increase in HQ size.

Development of a mutual understanding of the operation is crucial to the success of multinational working and relies on effective communication between the contingents. Barriers to effective communication include language difficulties and differences in the way national contingents interpret information or command intent. Language difficulties were cited as a potential source of tempo drag, particularly where those difficulties would undermine the use of rapid forms of communication (e.g. radios) in favour of slower but more easily understood media (e.g. written orders). A related concern that was raised concerned the possibility that, even where there are no language incompatibilities, the understanding or interpretation of what is being said may differ from that intended by the person providing the communication. It was stressed that it is critical to build

working relationships so that both sides can feel at ease in seeking clarification of orders where the intent is not absolutely clear.

### Conclusions

Multinational forces often represent a compromise between military capability and political constraints. Where situations are volatile, military commanders are less willing to compromise military effectiveness to accommodate the political requirement for multinationality. Effective multinational commanders exhibit certain key behaviours, for example adopting a flexible command and leadership style. In addition, they require core knowledge, skills and attributes including multinational sensitivity, adaptability, and self awareness. Future multinational commanders need appropriate, well-managed, education and experience in order to develop competency. In operations, strong relationships between national contingents, based upon mutual respect and understanding at all levels, including senior commanders, is key to the success of multinational forces. Owing to inconsistencies in command style between contingents, commanders who are used to the doctrine of 'mission command' are likely to have to adapt to the need for a more centralised approach. Participants identified many non-technical command challenges specific to the multinational arena including: diverse rules of engagement, misunderstanding of partners' capability, a diversity of decision making styles, and intelligence sharing. Command tends to be more challenging in larger multinational forces owing to the increased requirement to build and manage relationships with and between a greater number of nations. Interviewees proposed a number of methods for reducing non-technical frictions including: the deployment of liaison officers, the establishment of shared objectives and doctrine, and, where possible, the accommodation of diversity in socio-cultural norms and working practice. Cultural intelligence and sensitivity with regard to multinational partners is essential to build relationships and to avoid unintentional offence. Education and personal experience, for example via staff college and exchange postings, are central to the development of cultural intelligence. Incompatibility in language has the potential to introduce substantial friction to the multinational force. Consequently, making efforts to integrate all personnel, particularly those who are weaker in the working language of the force, can pay dividends.

### References

1. Connaughton, R. (1995). *The nature of future conflict*. London: Leo Cooper.
2. Palin, R. (1995). *Multinational military forces: Problems and prospects*. Adelphi paper 294. New York: OUP.
3. NATO Standardisation Agency (2004). NATO Glossary of terms and definitions AAP 6.
4. Clark, T. & Jones, R. (1999, June). Organisational interoperability maturity model for C2. In *CCRP, proceedings of the command and control research and technology symposium*, Newport, RI, USA.
5. Emery, F.E. & Trist, E.L. (1960). Socio-technical systems, in C.W. Churchman & M. Verhulst (eds.) *Management Science, Models and Techniques*, vol. 2, Pergamon, pp. 83-97
6. Verrall, N. G. & Stewart, K. G. (2000, November). *The effects and integration of cultural factors within future multinational military operations*. Unpublished DERA Report.
7. Stewart, K., Macklin, C., Proud, A., Verrall, N., & Widdowson, M. (2004, June). *Organisational and sociological factors of multinational forces: Baseline studies final report*. Unpublished QinetiQ report.
8. Stewart, K., Clarke, H., Goillau, P., Verrall, N., & Widdowson, M. (2004, September). *Non-Technical Interoperability in Multinational Forces*. 9th International Command and Control Research and Technology Symposium – The Power of Information Age Technologies, Copenhagen.

9. Purdy, C. S., Lovell, S., Stewart, K., Roddy, K., & Wilson, C. (2004, March). *Rehearsals for the Multicultural Theatre - Technical Working Paper*. Unpublished QinetiQ Report.
10. Macklin, C. M., Christie, M. J., & Stewart, K. G. (2004, April). *Liaison officers: final report*. Unpublished QinetiQ Report.
11. Clark, T. & Moon, T. (2001). *Interoperability for joint and coalition operations*. Australian Defence Force Journal No. 151.
12. Kiszely, J. (1999, December). Achieving high tempo – New challenges. *RUSI Journal*.