



The Impact of Coalition on Command and Control in Joint Fires Operations

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Joint Fires Context

- Joint Fires Support
 - coordination and integration of fires systems
 - composed of land, air, and sea-based weapons systems
 - synchronized in delivering fires and effects
 - delay, disrupt, destroy enemy forces, functions, facilities
- Provides support to land combat operations
- Provides commander with options
 - flexibility to select most appropriate capability to engage targets



Fundamental JFS challenges

- Identification, combination, and sharing of resources
 - across multi-component and multi-national forces
- Planning and coordination of efforts, sensors, fires
- Interoperability – interaction and collaboration with multi-component members
- Many application contexts (conflict, peace keeping, disaster relief)
- Potential issues with multi-national operations
 - differences in culture, doctrine, policy, etc.
 - measures used to assess success



Research objectives

- Identify and analyze the challenges involved in coalition JFS operations
 - Focus on ‘soft’ factors that go beyond technical issues of interoperability
- Provide recommendations to address the challenges identified
- Develop requirements for technological tools to support specific challenge areas



Data collection

- Review of literature and documentation
- Conduct syndicate session at JFS Working Group to identify potential ‘soft’ factors (input from ~ 60 multinational SMEs)
 - develop detailed data collection method
- Identification of a provisional set of issues to guide our research:
 - Application of laws of armed conflict
 - Rules of engagement (ROE)
 - National caveats
 - Authorization / political imperatives
 - Tactical capability / response time / training
 - Cultural interpretation of success
 - Ethics / morals (personal and group)
 - Expectations of other coalition partners



Data collection

- SMEs interviewed (5 Cdn, 6 US, 1 Finnish)
 - Representation across JFS domain → observer, decision-maker, shooter
 - Initial story-based Critical Decision Method interview
 - Follow-on structured interview
- SME data indicated small modifications required to initial list of ‘guiding issues’:
 - Trust and confidence
 - Language
 - National caveats
 - ROE
 - Training
 - Tactics, techniques, and procedures



Identification of coalition JFS challenges:

Data synthesis – Step 2

- Break-out data by subsystem
 - Intelligence
 - Planning
 - Command and control
 - Coordination
 - Communication
 - Delivery of fires
 - Logistics
 - Manoeuvre

- Subsystems developed in previous DRDC research (Famewo, Taylor, Bruyn, Martin, & Matthews, 2008)



Identification of coalition JFS challenges:

Data synthesis – Step 3

- Summarize data into subsystem x JFS coalition challenge category
 - ‘Evidence’ collected from SMEs was grouped appropriately
 - Summary issues for each group of ‘evidence’ developed
 - Issues were filed by subsystem and JFS coalition challenge category
- Final result – a table outlining
 - The issues for each JFS coalition challenge category
 - The subsystems each issue affects



Identification of coalition JFS challenges:

Development of recommendations

- Recommendations were developed to address each issue
- Broad themes across recommendations were identified to develop an overall summary list of recommendations
- Results validated in interviews with JFS SMEs (2 Cnd)
- Delay between first and second interview – allowed for refinement of results, validation of refinements



Development of tool requirements

Tool requirements

- Objective: high-level understanding of
 - Potential for tools
 - The forms the tools could take
- Tool requirements were developed for tools to:
 - Support advanced planning
 - Mitigate language issues
 - Enhance trust



Identification of coalition JFS challenges:

Results – Trust and Confidence (HQ staff level)

- Issue
 - T&C at the HQ-level is established through individual contact, and involves trust in a counterpart's assessment of their troops' abilities
 - Increased T&C at the HQ level smoothes the planning process
- Implications
 - Level of T&C affects how information is shared
 - Outside of ABCA nations, there can be low trust that HQ-level work is being done effectively (80/20 rule)
 - Low T&C may necessitate extra review to develop confidence in products
- Recommendations
 - Personnel exchange, advanced planning tools, common standards and training curriculum



Identification of coalition JFS challenges:

Results – Trust and Confidence (force level)

- Issue
 - T&C at force level established through knowledge of or experience with the capabilities of other forces
 - T&C level may or may not be well-calibrated with reality
- Implications
 - Efficient employment of forces – some nations may be called on frequently while others are kept out of the fight
- Recommendations
 - Personnel exchange, advanced planning tools, coalition exercises
- Impacts
 - Planning, C2, Coordination, Delivery of Fires, Logistics



Identification of coalition JFS challenges:

Results – Language

- Issue
 - Differences in actual spoken language (German v. English)
 - Differences in military language adopted (STANAG compliant?)
 - Differences in understanding of a shared language
- Implications
 - Timelines may be increased (question, confirm, repeat, translate)
 - Potential for errors and misinterpretations
- Recommendations
 - Personnel exchange, common standards and training curriculum, language support through technology, coalition exercises
- Impacts
 - Planning, C2, Coordination, Delivery of Fires



Identification of coalition JFS challenges:

Results – National caveats

- Issue
 - NCs reflect changing political will of a country, and are open to interpretation
 - Can be difficult to predict how they will be applied from ‘the outside’
- Implications
 - Plans must be flexible, as NC play can lead to changes in plans, re-tasking
 - Timelines can be increased to allow for NC issues to be sorted out
 - Can complicate sharing of intelligence
- Recommendations
 - Personnel exchange, advanced planning tools, common standards and training curriculum, coalition exercises
- Impacts
 - Planning, C2, Coordination, Communication, Delivery of Fires, Logistics



Identification of coalition JFS challenges:

Results – ROE

- Issue
 - ROE are not well understood across coalition partners, open to interpretation
 - Some partners will ‘work’ their ROE, others will stonewall with them
- Implications
 - Workload increased by need to know, interpret others’ ROE
 - Coalition may have to operate under the most restrictive ROE in effect
- Recommendations
 - Advanced planning tools, coalition exercises
- Impacts
 - Planning, C2, Coordination, Delivery of Fires



Identification of coalition JFS challenges:

Results – Tactics, techniques, and procedures

- Issue
 - Coalition partners have different TTPs, and so are more or less capable of interoperation with other coalition partners
- Implications
 - There will likely never be a common OPP across all possible coalition partners
 - Decision-making models can vary – centralized vs decentralized
 - Increased workload to communicate with multiple circuits/systems
- Recommendations
 - Personnel exchange, advanced planning tools, common standards and training curriculum, coalition exercises
- Impacts
 - Planning, C2, Coordination, Delivery of Fires, Logistics, Manoeuvre



Identification of coalition JFS challenges:

Results – Training

- Issue
 - Coalition partners have different standards for training, and so have different levels of capability w.r.t. other nations
 - Partners may have different standards for promotion
- Implications
 - Timelines extended in planning and control
 - Difference in battle rhythms can cause problems
 - Nations with lower levels of capability will take longer to respond, will have less predictable results
 - May be a reluctance to call on certain partners
- Recommendations
 - Personnel exchange, common standards and training curriculum, coalition exercises
- Impacts
 - C2, Coordination, Delivery of Fires, Logistics



Identification of coalition JFS challenges:

Consolidated recommendations

- **Exchange of personnel**
 - Create and maintain active exchange of personnel between, at a minimum, ABCA nations
 - Plan for succession, so that knowledge gained through exchange is not lost
 - Involves personal contact – perhaps one of the most effective means of addressing the challenges identified
- **Tools to enhance Trust**
 - Web-based social networking tools
- **Advanced planning tools**
 - Develop or procure tools to assist in:
 - Command and control planning
 - Blue force tracking
 - Intelligence sharing
 - War-gaming with support for generation of courses of action in light of national caveat and ROE play



Identification of coalition JFS challenges:

Consolidated recommendations, cont'd

- **Common standards and training curriculum**
 - Common standards and a common training curriculum should be developed and used at the JFS training facilities of ABCA nations
 - Example: Standards cell that is responsive to a coalition-based oversight committee
- **Language support through technology**
 - Computerized tools to help sort out some of the language and terminology issues
- **Coalition exercises**
 - Coalition exercises assist operators in navigating many of the challenges that have been identified
 - Should be held more frequently than the current 8-9 year schedule



Limitations

- This research should be viewed as a summary overview of the subject which points to further areas for research
- Any specific plans should be based on consultation with a greater number of SMEs with a greater variety of experience
- Recommendations should be investigated further to establish their feasibility

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