Command & Control
At the Cross-Roads

Professor Derek K Hitchins
"The exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of his mission.

Command and Control functions are performed through an arrangement of personnel, equipment, communications, facilities and procedures which are employed by a commander in planning, directing, coordinating and controlling forces and operations in the accomplishment of his mission."

Publication 1, US Joint Chiefs of Staff
Themes:—

- Decisiveness
- Doctrine
- Leadership
- Discipline
- Force cohesion
- Decision space

C2, Doctrine, Strategy & Tactics
Peace Dividend—Uncertainty

• Cold War —predictable, high tech. stand-off
  – NATO reinforced by WP, and *vice versa*

• Peace has brought: —
  – Granby/Desert Storm
  – Former Jugoslavia
  – Ethiopia
  – Granada
  – Panama City…

• …different lessons, new ideas, CNN Effect, even more politics…
Manoeuvre Warfare

How two nations can use the same words to mean quite different things
US View of Manoeuvre Warfare?

- American Football analogy
  - series of set pieces
  - attackers have covert plan
  - hit opposition at all points
US Manoeuvre Warfare

• Hit enemy in depth (Panama City 26—28 separate points simultaneously)
  – communications
  – information sources & sensors
  – command centres
  – shatter the enemy
• ...no subsequent opposition
• This is Information War
US View of Manoeuvre / Information Warfare

Excerpts from BBC2 Horizon Programme
Joint Vision 2010

Advanced Technologies

New Operational Concepts and Doctrine

Organizational Change
• Execution of Time-critical Missions
  • Integrated Force Management
  • Participative Planning and Preemption

• Consistent Battlespace Understanding

• Precision Information Direction

• Distributed Environment Support

• Universal Transaction Services

• Assurance of Services

• Effective Force Employment
  – Rehearse, Evaluate and Adapt Plans Rapidly
  – Synchronize Distributed Force Operations
  – Acquire Targets, Execute Timely Response

• Battlespace Awareness
  – collaborative situation awareness
  – Consistency of view across all forces
  – Tailored Information Distribution

• The Information Grid
  – Single federation of heterogeneous Information Systems
  – Infrastructure support of distributed processes, Information search and collaborative work
  – Seamless responsive communications
  – Assured managed resources support mission priorities
• Separates Planning from Execution
• All planning done at high level, in depth, in detail
UK View of Manoeuvre Warfare
• Soccer analogy
  – fluid game, players moving on and off ball
  – strategy, but detailed plan develops as game progresses
    » mission command
  – fast moving, *blitz-krieg* action
• Mobile forces acting in concert to outflank, outmanoeuvre (mobile?) enemy
• Fluid, unpredictable, forces enemy on to “back foot”
• Requires commanders with initiative, flexibility, mutual trust, shared goals
• Hence *Auftragstaktik*, Mission Command
  – every officer develops planning and command skills at every level
• Hence regimental system
  – personal knowledge, shared experiences, mutual trust…

N.B. Both US and UK, in different ways, reflect Ghengis Khan’s Command & Control of exclusively-cavalry forces
<table>
<thead>
<tr>
<th>Commander</th>
<th>Tasking</th>
<th>Decisions</th>
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<td>Enemy ORBATS, intentions</td>
<td>Intelligence</td>
<td>Enemy ORBATS, intentions</td>
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<td>Constraints</td>
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<td>Logistics</td>
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N.B. N^2 chart appears at each and every C^2 location
Comparing Flat-planning and Fractal C² Decision-making
—Flat Planning

- Centralized high-level planning* promises
  - optimal employment of resources across whole battlespace, plus
  - close political/financial control

- Takes maximum advantage of / heavily dependent on (according to viewpoint) communications and processing technologies
  - creates extensive technology target to enemy

- Execution element potentially isolated from planning, and vice versa
  - potential for “us-and-them” friction/loyalties/cultures, and...
  - “efficient”, impersonal, inhuman(?) decisions/executions

Flat organization faster, extensive, but brittle?

* May be dispersed using technology, but still essentially one system
C² speed determined by Force under Command
Comparing Flat-planning and Fractal C² Decision-making
—*Fractal*

- Virtually indestructible—same generic capabilities at each level.
  - fractal structure ideal to accommodate chaotic battlespace
- Inherent “succession” training
- Will continue to operate without communications for extended periods
  - so, does UK need digitization?
  - probably, if only to inter-operate with US
- Potential to adapt in real time, e.g. peacekeeping

Fractal organization slower, but adaptable and robust?
• Military yet to make best use of *Indigenous Police* in UN Policing Ops.
  – local contacts, good intelligence
  – philosophy — force is *last resort*
    » they will still be there when military depart

• Integrated UN Force — Indigenous Police Command & Control?
Policing

- New-ish role for Forces
- Heavily politicized—even titles are fraught
- UK, Surrey Police are leading exponents
  - selling expertise worldwide
  - use following 3 terms, with specific meanings & police “behaviours” at each level
Peacemaking, Peacekeeping, Peacebuilding

- **Peacebuilding—Level 3**
  - CARE Stops and Reinforcement
  - proactive Multi-Agency long-term problem solving

- **Peacekeeping—Level 2**
  - PACE Stops and Enforcement
  - proactive visible policing, patrolling, interaction

- **Peacemaking—Level 1**
  - reactive crime fighting
  - fast reaction stops build-up

Based on comprehensive Operational and Criminal Intelligence
Aggressive begging—fourth of 6 complaints
22/9—23/9/97 Ref 1064
C² Deployment
The C2 decision pyramid

**Doctrine-consistent group decisions**
- Decision-space limited by beliefs, doctrine, information and intelligence
  - e.g. positional, manoeuvre, peacekeeping, peacemaking, peacebuilding, campaigns...

**Doctrinal models of conflict management**
- Technology-supported, decision-forming processes
  - communications, processors formed to support paradigm

**Group-decision-making paradigm**
- worldview of group decision-forming structure
  - social genotype, roles bonded by shared beliefs
  - shared beliefs, culture
  - motivated self interest

**Role-relationship structure**

**Energetic cohesive social fabric**

*N.B. C2 organizations will set in place each of the lower layers in turn, finally producing the top level output*
**C² Start-up—State Model**

**NASCENT SOCIAL GENOTYPE**
- Viable C² team, energetic, co-directed, low internal disorder, innovative, shared beliefs, goals,
- Fail to relate
- Continual Role-relationship adaptation

**ESTABLISHED SOCIAL GENOTYPE**
- Coherent, stable behaviour & performance.
- Controlled, predictable, high internal energy

**VIABLE C² ROLE**
- Viable, as a C² role, but no useful output

**DISPERSED C² ROLES**
- (Personnel & machines)
- Transfer
- Arrival
- Resources/provisions

**INTER-LINKING**
- Mutual Isolation
- Fail to relate
Decision-making & Decisiveness

- making decisions
- “good” decisions
Good Decisions: The Comprehensive Process Viewpoint

- Decision Process
  - Cost-exchange ratios
    - …favours…
    - …implies economic…
    - …encourages…
    - …emphasizes…
- Force multipliers
  - Rational consistent, logical, attainable
    - …enabling…
- Less risk of enemy a "free ride"
  - Employs all relevant information
Decision Outcome

...favours...

**Improves control of / reduces entropy in/ disordered situation**

...to keep opposition on the back foot...

**Fast & decisive**

...which demands that decisions be...

**Rate of Change of situation**

...to become...

**Anticipate reaction**

...expert decisions under stress...

**Bold, unpredictable**

...decisions provoke...

Good Decisions: Never mind the Process —does it work?

Viewpoint
Decisions: Outcome vs. Process vs. ?

**Decision Outcome**
- Improves control of / reduces entropy in/disordered situation
  - ...to keep opposition on the back foot...
- Fast & decisive
  - ...which demands that decisions be...
- Rate of Change of situation
  - ...decisions provoke...
- Bold, unpredictable
  - ...which demands that decisions be...
- **Inspires confidence**
  - ...reduces vulnerability...
  - ...favours...
- **Decision Process**
  - Less risk of enemy a "free ride"
    - ...to become...
  - **Cost-exchange ratios**
    - ...favour...
  - **Force multipliers**
  - **Rational consistent, logical, attainable**
  - Employs all relevant information
  - ...enabling...

**Nodes**
Belief System Battle

Assyrians besieging a city
— from the Assyrian Marbles, British Museum