

DIRECTORATE GENERAL OF DEVELOPMENT AND DOCTRINE



Future C4ISTAR Perspectives for Land Forces
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Report Documentation Page

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Land Perspective

- C4ISTAR has come of age.
- Will impact on how we fight and operate
- Challenges:
 - Technical,
 - Doctrinal
 - Organisational
 - Cultural

“The technology that is available today and now in development can revolutionise the way we conduct military operations. That technology can give us the ability to see a “battlefield” as large as Iraq or Korea - an area 200 miles on a side - with unprecedented fidelity, comprehension and timeliness; by night or day, in any kind of weather, all the time. An Army corps commander in his field headquarters will have access to a live 3-dimensional image of the entire battlefield”

*Adm Bill Owens USN
Lifting the Fog of War*



Area Weather

VT: 07:15:02Z	
Orange County	Quality, POC
Townsend	Information, POC
Al Ditchfield	Quality, POC
Shawish Inn, NH	Information, POC
Warwick South, VT	Quality, POC
Karlsruhe International, VT	Information, POC
	07:15:02Z

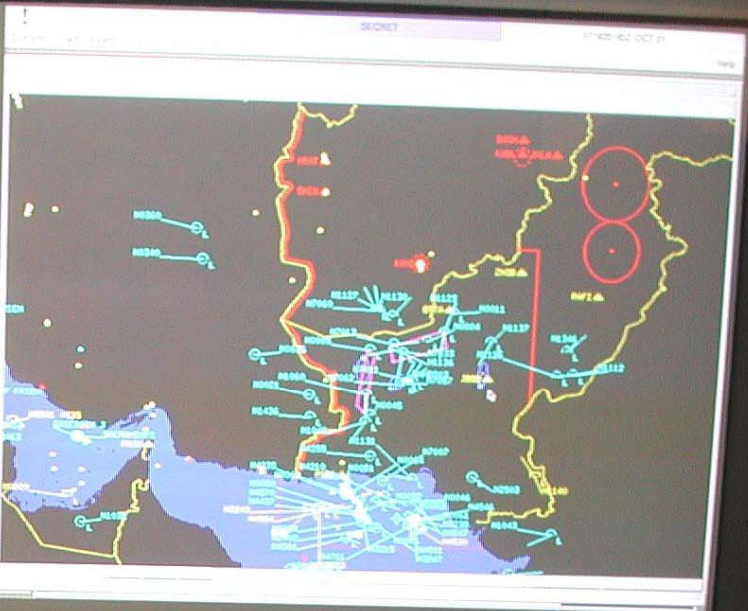
AIR DEFENSE WARNING

WHITE

WEAPONS CONTROL STATUS

HOLD FOR ABT

FREE FOR TBM



Land Perspective

- BLUE Picture easy!
- Red Picture - not so
- Common understanding of a common picture - at all levels.
 - Think of Riyadh v 7 US Corps perceptions
- 70-90% fidelity for open terrain realistic
- But complex terrain & complex operations?
 - That is where we are going!

Land Perspective

- CENTCOM today - Gen Franks stayed in Tampa

- C4ISTAR offers new command paradigm for the Information Age:

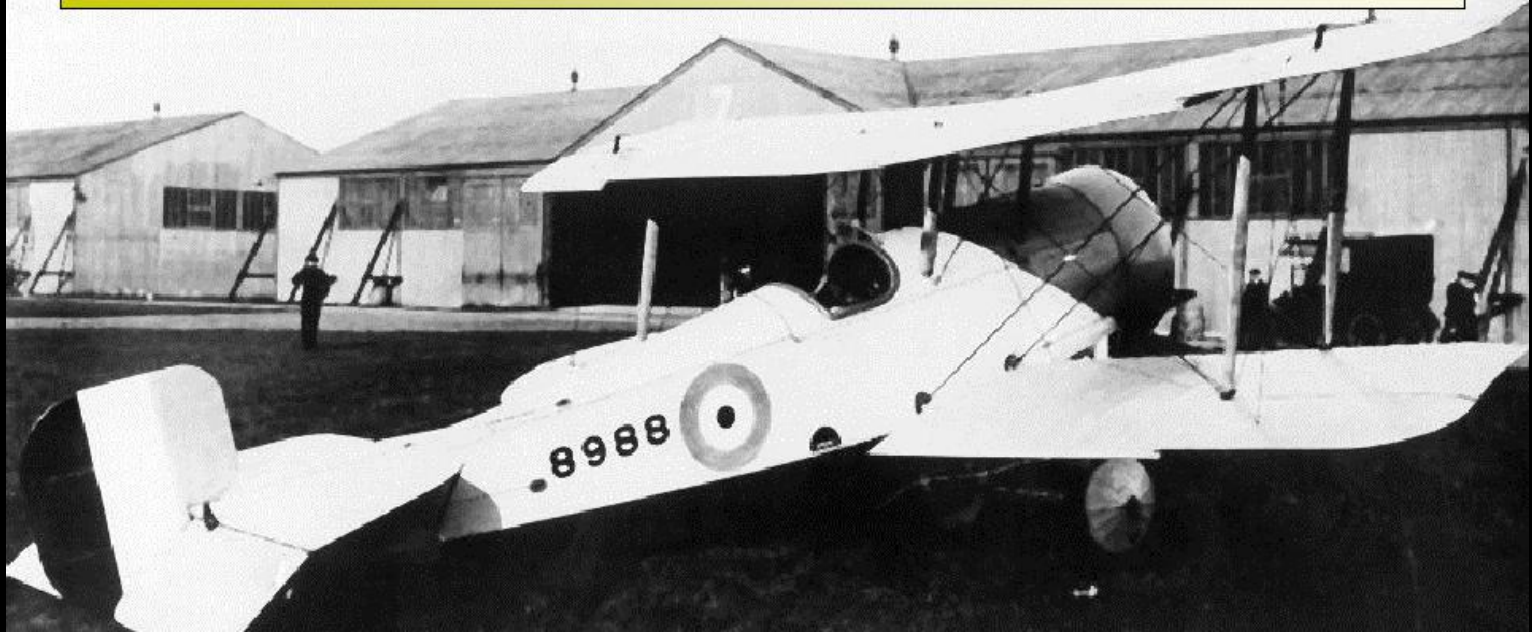
“He saw and he conquered without actually going there”

Land Perspective

- Greatest impact - space based and aerial systems
- RAPTOR, ASTOR, WATCHKEEPER & Beyond
- Potential to revolutionise commanders' perspectives of their battlespace at every level of command.

'I trust that none of my officers considers that the aircraft can be used for anything other than observation and the dropping of hand held bombs. The responsibility for reconnaissance remains where it always has been - with the cavalry !'

Field Marshal Haig



Land Perspective

- Need for caution in lessons from Afghanistan:
 - Already yesterday's war (but there are signposts)
 - Benign air environment
 - Benign maritime environment
 - Benign electromagnetic environment
 - Benign cyberspace
- Unrealistically favoured UAVs
- Obliging surrogate ground force (80,000?)

The purpose of manoeuvre forces is to find the enemy, to locate him, to determine the outline of the enemy force, to find those specific points on the ground that are most vulnerable to attack by fire, to observe them, to separate civilians from military, deception from real targets and then to superintend going after those targets”

MG Robert Scales USA

JDW, 2 Jan 02.

Land Perspective

- Traditional Manoeuvre roles enduring in some form

But:

- Need to investigate **Networked Situation**

Aware:

- Dispersed forces
- Recce/strike
- Swarming
- Joint Teams

“...sets of capabilities that can be combined at the right time and in the right place can provide very precise effect.... The fact that an aeroplane as old as a **B52** and a warrior riding in on something as historic as **horseback** could be linked to attack without constraint indicates that advances have been made in both **capabilities**, laptop computers and GPS for example, and **mindset.** ”

Gen Larry Welch

President IDA

Land Perspective

Impact of Future C4ISTAR on Conventional Tactical Combat

- Decisive Deep operations
- Expanded Close battle
- Increased emphasis on aerial systems and indirect fire
- Engage earlier
- Better weapon selection
- More precise and lethal effect.

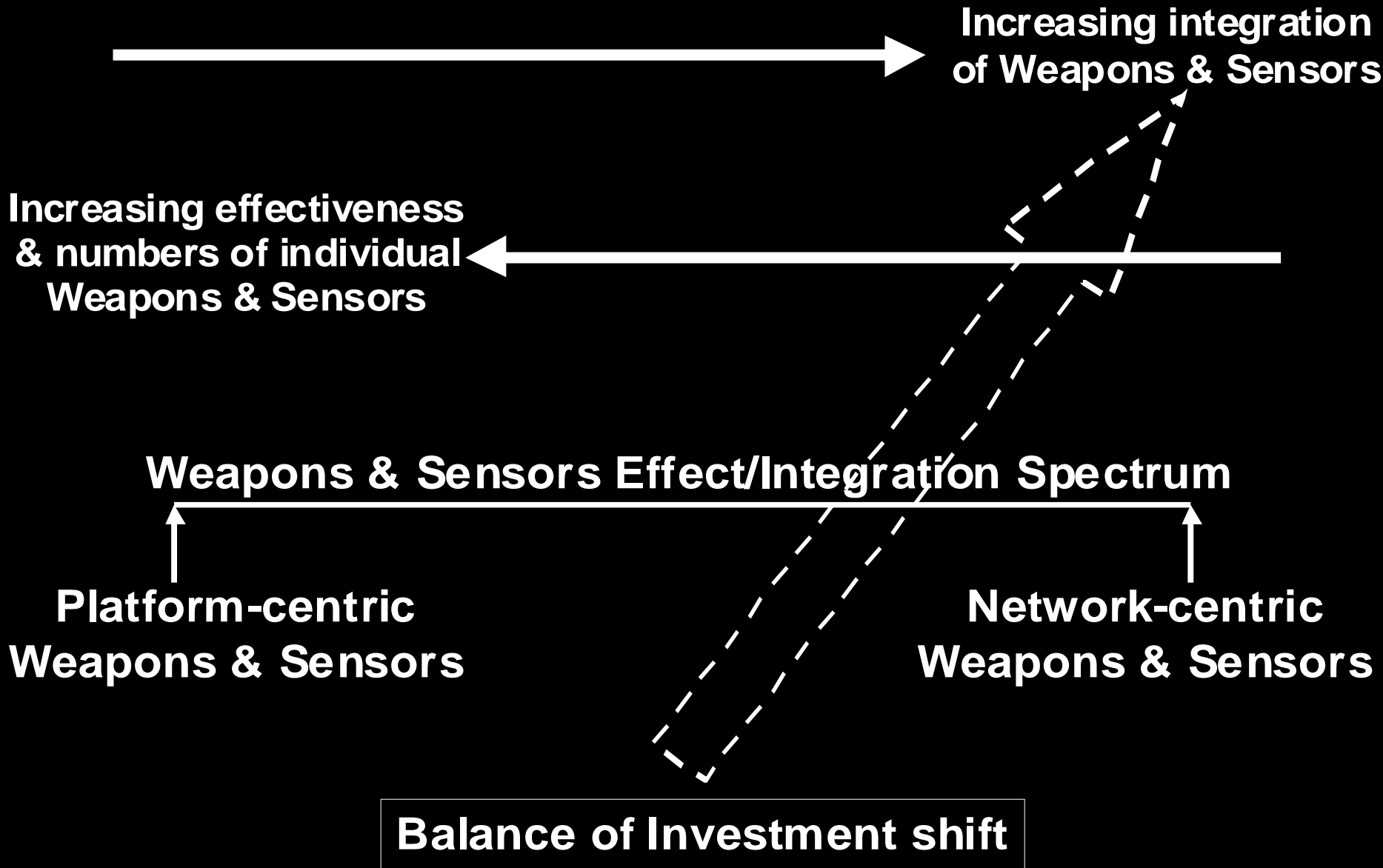
Land Perspective

- Find
- Fix - with economy of force
- Strike
- Exploit

Land Perspective

- But robust network is essential:
- C4 Architecture more important than more sensors per se
- Network centric approach to ISTAR acquisition

Network-centric Approach to Acquisition



The Afghan War, so easily understood in its early black and white days,has lately taken on shades of grey.the killing of 21 terrorists and the capture of 27 more in a commando raid north of Kandahar and last weekend's launch of a hellfire missile at a tall man who might have been Osama bin Laden - appear instead to have been tragedies”

Washington Post

12 Feb 2002

Land Perspective

- Must close with:
 - Organisational
 - Peopleand
 - Cultural issues

seeing is believing Field commanders will soon be the driving force.

