

Two Weeks with a Network-Centric Infantry Company in an Urban Warfare Trial

Gideon Y. Akavia & Eylam Gofer

CEMA - Center for Military Analyses

Haifa, Israel



A rather unusual battalion...

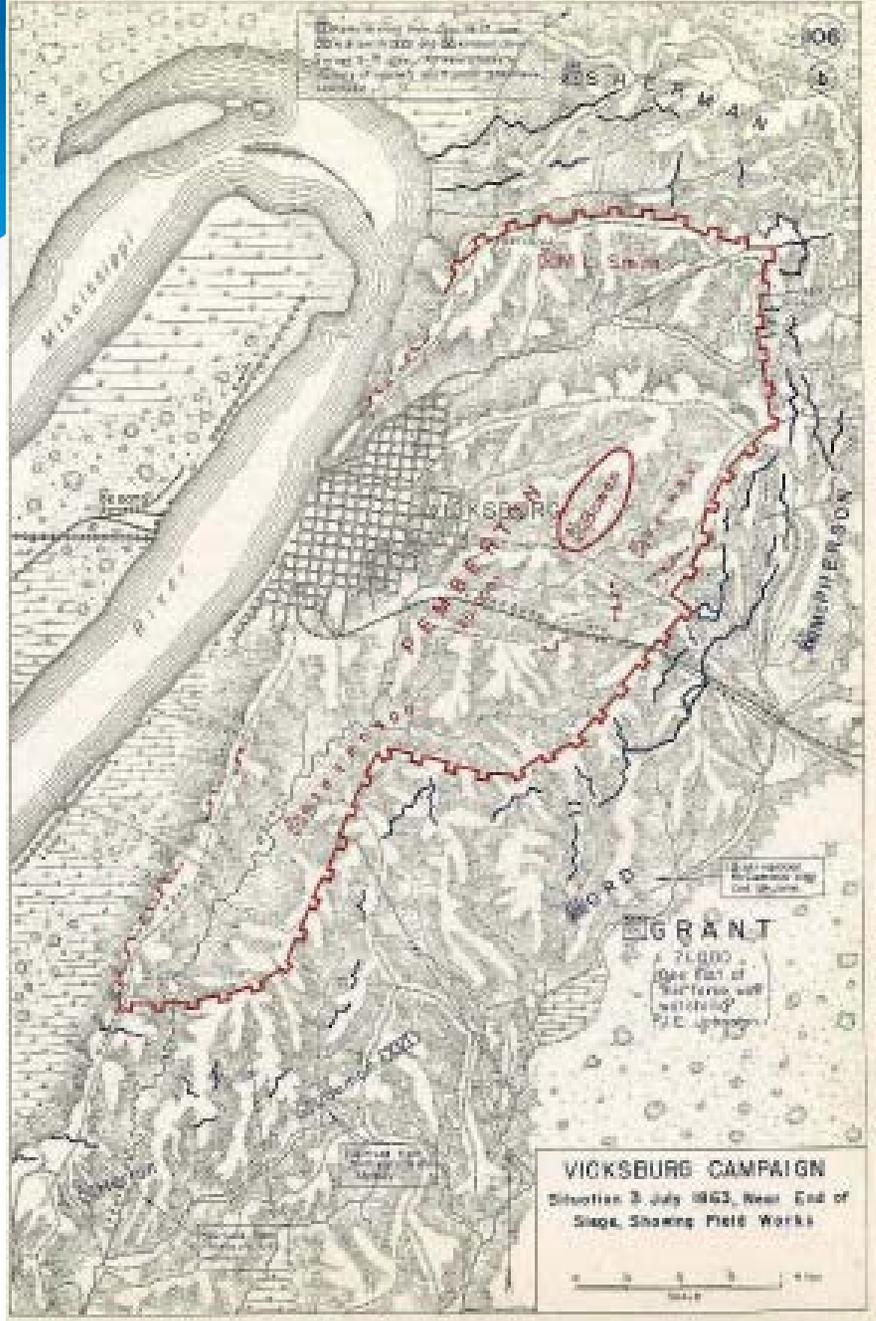
- More fire support - artillery and air - and more combat engineering assets than is usual
- Lots of intelligence gathering devices (in fixed positions around the village, during the trial)
- The battalion had a prototype man-portable command & control system
- But battalion headquarters was located in a fixed heavily computerized tent, near village
- An early prototype “future land warrior” kit

Conduct of the trial

- The trial consisted of twelve exercises:
 - 6 platoon exercises
 - 3 company-size task force exercises
 - 3 battalion-level exercises
 - (day and night, mounted and dismounted)
- All vehicles and some foot soldiers were instrumented by the NTC -> info supplied in real time to trial commander
- Briefing and debriefing in lecture “rooms”

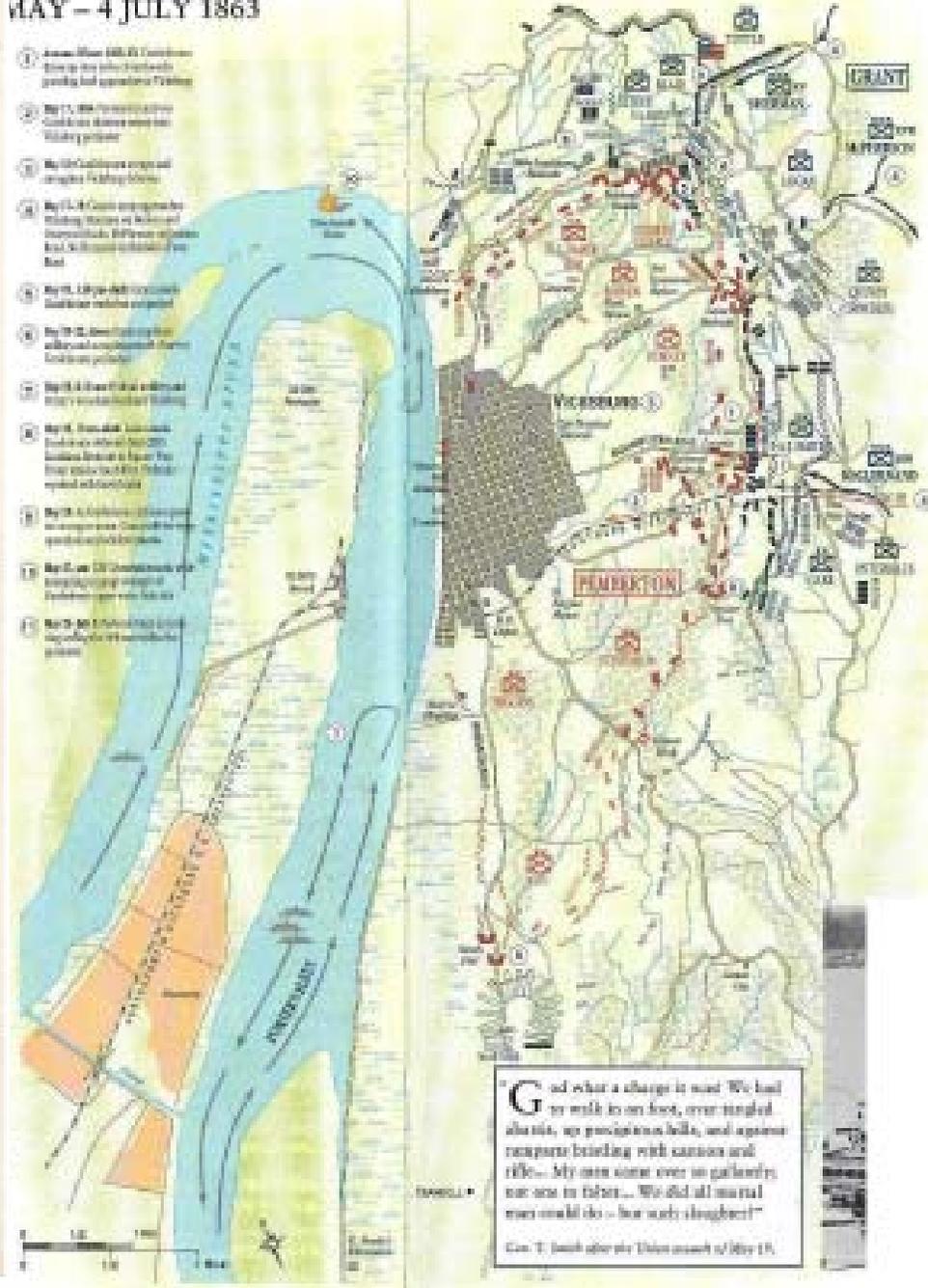
Safety considerations

- No live fire, but many people and vehicles, some armored, in the narrow alleys ->safety!
- Each platoon and company was accompanied by a controller/observer who acted as safety officer
- Many visitors, who were not allowed into the village. Were invited into a tent with computers, displays and speakers
- “Issue observers” - not allowed, except...
- We observed the lowest levels - company and below - from assembly into the village, inclusive



MAY - 4 JULY 1863

1. Army Moves into Position
2. May 17, 1863: Union Forces Capture the City of Vicksburg
3. May 18, 1863: Union Forces Capture the City of Vicksburg
4. May 19, 1863: Union Forces Capture the City of Vicksburg
5. May 20, 1863: Union Forces Capture the City of Vicksburg
6. May 21, 1863: Union Forces Capture the City of Vicksburg
7. May 22, 1863: Union Forces Capture the City of Vicksburg
8. May 23, 1863: Union Forces Capture the City of Vicksburg
9. May 24, 1863: Union Forces Capture the City of Vicksburg
10. May 25, 1863: Union Forces Capture the City of Vicksburg
11. May 26, 1863: Union Forces Capture the City of Vicksburg
12. May 27, 1863: Union Forces Capture the City of Vicksburg
13. May 28, 1863: Union Forces Capture the City of Vicksburg
14. May 29, 1863: Union Forces Capture the City of Vicksburg
15. May 30, 1863: Union Forces Capture the City of Vicksburg
16. May 31, 1863: Union Forces Capture the City of Vicksburg
17. June 1, 1863: Union Forces Capture the City of Vicksburg
18. June 2, 1863: Union Forces Capture the City of Vicksburg
19. June 3, 1863: Union Forces Capture the City of Vicksburg
20. June 4, 1863: Union Forces Capture the City of Vicksburg



God what a change is made! We had to walk in on foot, over tangled alleys, up precipitous hills, and against constant firing with cannons and rifle. My men came over so gloriously, our men in front... We did all mortal men could do - for woe's sake!"

Gen. T. Smith after the Union assault of July 19.



telle de la guerre du Vietnam. Dans ce paysage, à quelques kilomètres du 17^e parallèle, si décevant que les collines n'ont pas de nom mais des numéros, les Vietnamiens embusqués sur les hauteurs ont tendu un piège. Ils veulent attirer les Américains dans la ravine qui domine la cote 881. Le

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Warriors of the map vs Warriors in contact

- It is easy to use computers to help “warriors of the map”, like staff officers at division HQs (maps, orders, tables). Once computerized, info can be easily transmitted to others
- It is much more difficult to help warriors in contact. Their eyes and hands are busy, and not with their computers... They talk a different language - not the language of the map but the language of contact (language of range card?)

We focused on the interaction between the computerized C&C system and warriors in contact

and will divide our observations into three groups:

- The individual riflemen
- The junior commanders
- The help battalion headquarters can offer the warriors

The individual riflemen

- Had a variety of personal computer connected to the battalion Command & Control system
- PDAs? In the pocket, most of the time
- Helmet-mounted displays? Can't watch display and terrain at the same time
- Watching info versus feeding info
- GPS -> easy to feed self-location automatically (GPS accuracy? when under a roof?) (comm delays -> available info out of date)

The individual riflemen (cont.)

- With GPS Locator + rangefinder/compass it is easy to feed location of point/enemy looked at
- But the identification and description of the point looked at? This info was rarely fed by regular infantrymen. Fed only by specialists
- Multiple sightings of the same enemy (made by different people or at different times)
- Display out-of-date info? Might be misleading
- “Sighting” friendly troops as enemy

The Junior Commander

- Sees only isolated snapshots of his display
- Can't devote sustained attention to his display
-> difficult to identify developments
- For example: can't turn isolated sightings into an identified "track" of an enemy on the move
- Tends to concentrate on his immediate area and on his immediate enemy
- Will devote more attention to his display only when he would anyhow stop, observe, think...

More Info Available, **but...**

- **Info is raw.** Even own force location is raw
- At higher levels, analysis (filtering) & synthesis (aggregation and abstracting) leads to a Common Operating Picture (COP) -> common working assumption (hypothesis)!
- COP in the company? Changes/details?
- Junior leaders will have a better (not perfect!) picture, will still base decisions on mission, enemy, terrain (and on working assumptions)
- Situational awareness - “macro”, not “micro”

Video to the company?

- Since 1991 we have all seen battle video, and everybody wants to have video
- Can transmit video to company. Should we?
- Interpreting video takes some training and sustained attention. (during combat?)
- Lay people who received video often did not understand what they are seeing
- Give company interpreted stills, not raw video

Helping the Junior Commander

- When radios were heavy and bulky we gave him a radio-man, now we give him a C2-man?
- The C2-man devoted attention, fed info, and alerted the commander when something important occurred. (in-crew communication?)
- Will a mounted company commander still command his vehicle? (or watch display)
- Most of the help will come from the battalion!

Most Help - from Battalion HQs

- Because HQs people are sitting at “desks”, & can devote sustained attention to single tasks
- Assign to each company commander an S3 aide? An S2 aide? Combine the roles of both aides and assign each company commander a “controller”, who will supply him with a peripheral situational awareness?
- The battalion HQ will become bigger, and may suck people from the companies. (What??!!)

Conclusions?

- Reliance on “happiness tests” for assessment of objective issues is all too common
[Alberts & Hayes, Code of Best Practice]
- Bliss was it in that dawn to be alive,
But to be young was very heaven!
[Wordsworth]
- Bliss was it in those weeks to spend time with the young soldiers, the weather was nice, and the desert was blooming

Conclusions

- This trial doesn't prove much, but leads to interesting questions and hypotheses
- The main question: can network-centric warfare help warriors in contact
- The tentative answer: NCW can offer important but partial help
- Should try not to overwhelm warriors with raw data - supply them with information prepared (cooked? digested?) at higher level HQs

The Fog of War Will Still be with Us

- Help with navigation, own force locations, and boundaries is very important, even if partial
- We may have more information about enemy
- But COP will still be neither complete nor entirely accurate and up to date
- Will still have to base decisions on analysis of terrain and possible enemy courses of action and on common working assumptions