

Concentration and Asymmetry in Air Power

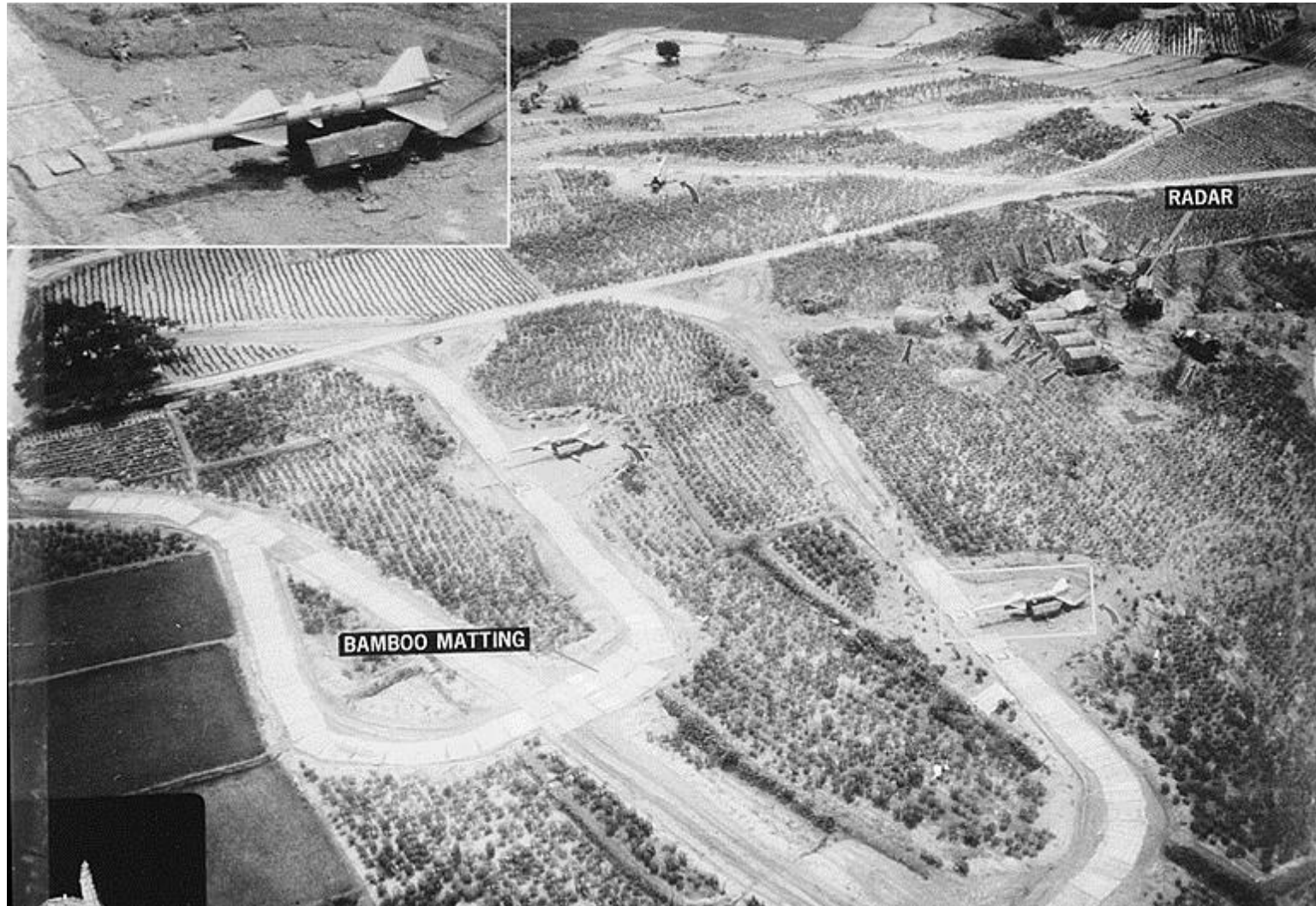
Lessons for the defensive
employment of small air forces

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Air War – North Vietnam



North Vietnamese integrated air defence system



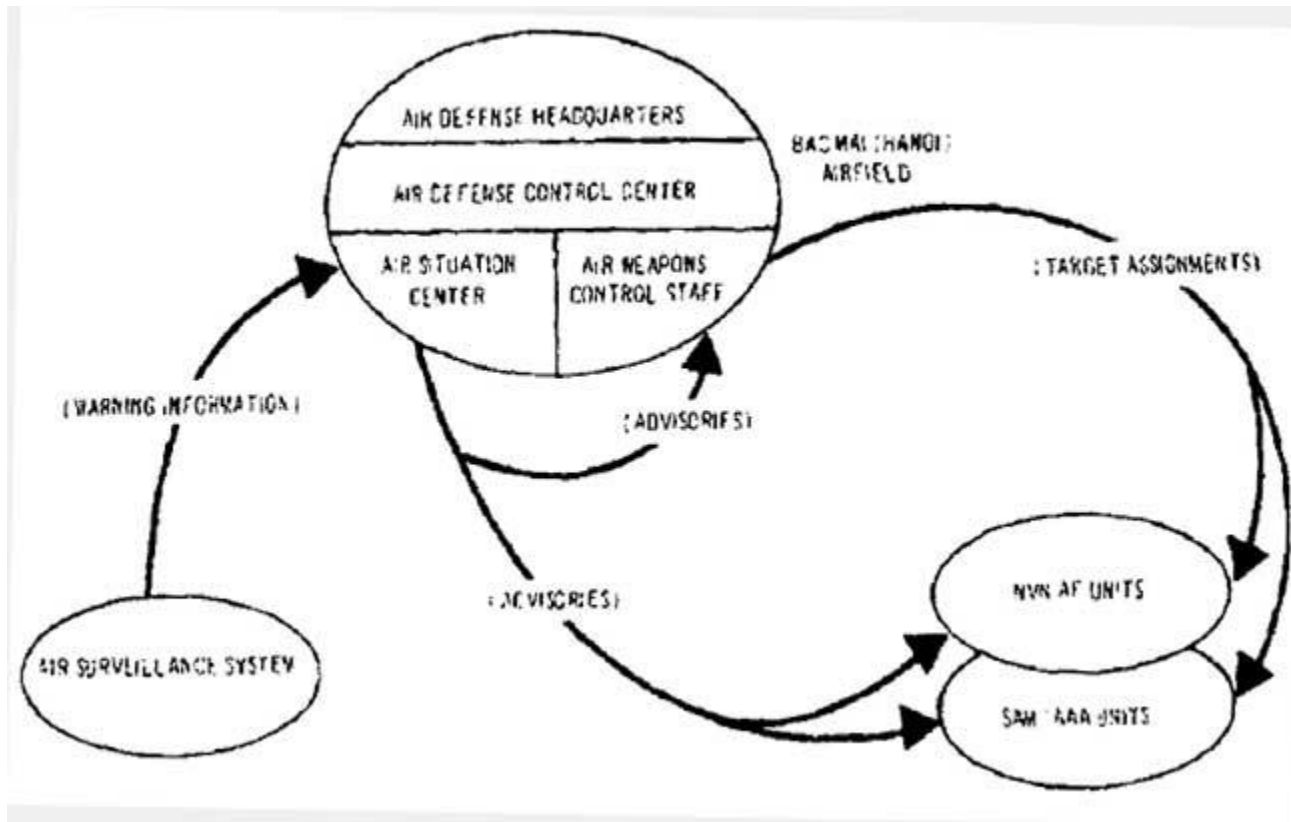
North Vietnamese interceptors: MiG-17/19/21



Potency of North Vietnamese interceptors



North Vietnamese GCI system



US air-to-air kill ratios

- Vietnam: 2.4-1
- Korea (1950-52): 4.7-1
- Korea (1952-53): 13.9-1

Attritional strain on US air forces



North Vietnam

- The evidence from the air war over North Vietnam shows that air combat is not Lanchestrian.
- The case of North Vietnam shows, yet again, that air combat is asymmetric

F-105



F-4 Escorts



North Vietnam

- The US air campaign against North Vietnam was not only unsuccessful in terms of achieving American strategic objectives
- It also contributed to American defeat in Vietnam.

The Falklands War (1982)



Sea Harrier CAP



San Carlos Water



801 Squadron FAA



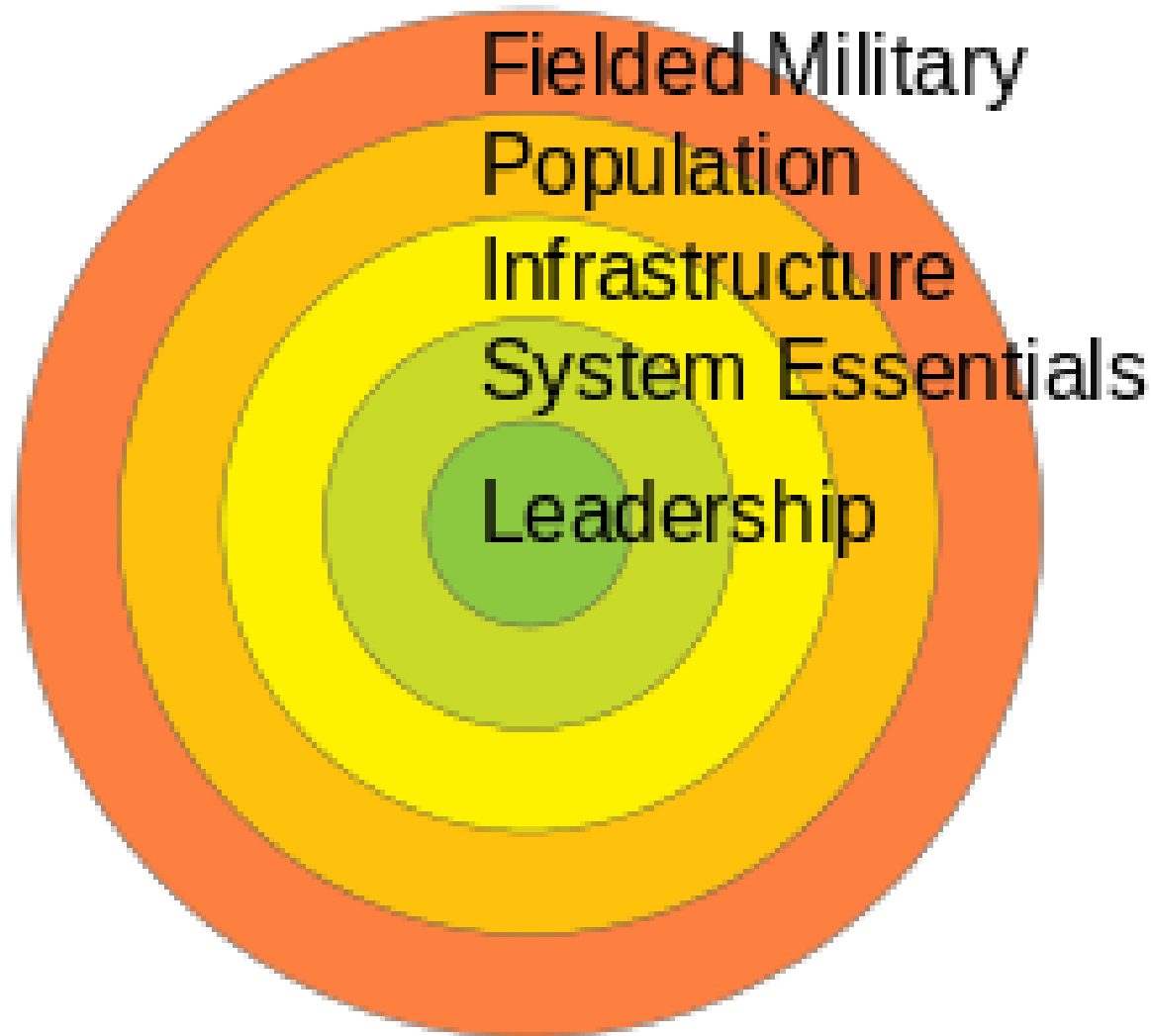
The Gulf War (1991)



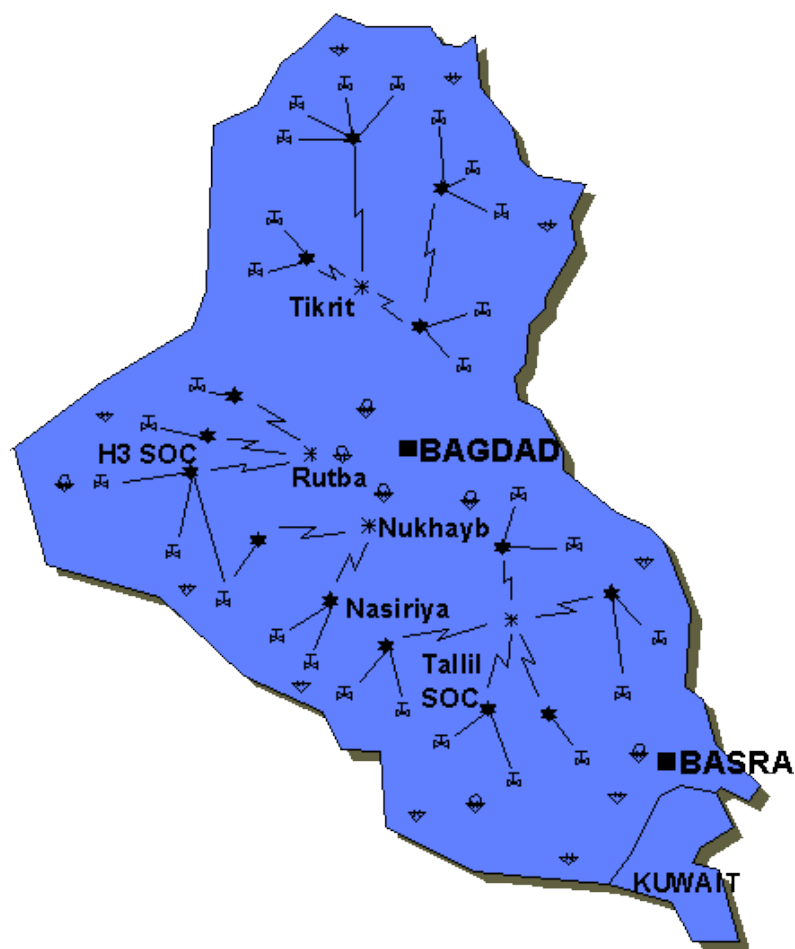
John Warden



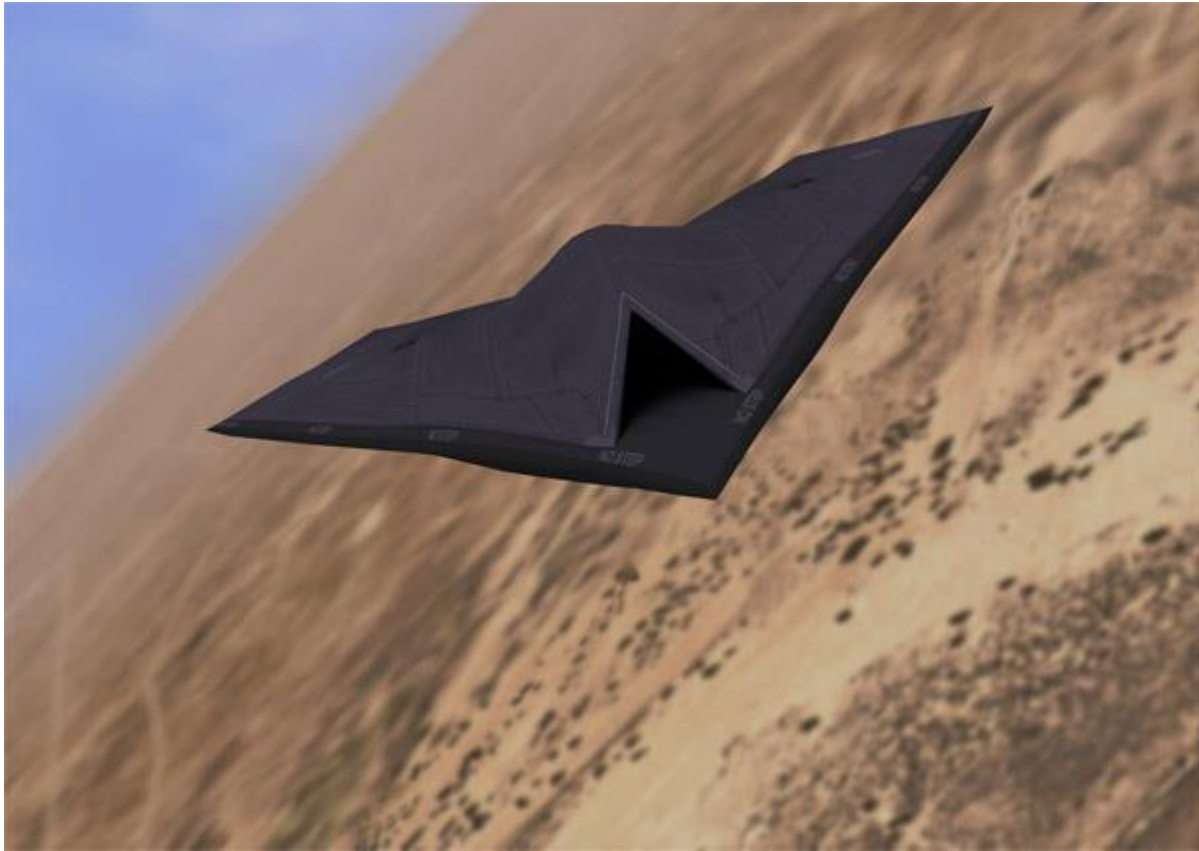
Warden's application of airpower



Iraqi Air Defence



UCAVs



- Between the battle of Britain and Vietnam, technology moved the balance of forces in the direction of the defence so that a genuinely integrated air defence became possible.
- The principle of economy achieved by Keith Park in the Battle of Britain was manifested by the North Vietnamese in countering the most powerful air arm in history.
- The advantage apparently regained by the offensive during the Gulf War was effectively another example of the application of overwhelming force, in which the systemic mathematical advantage of the defence did not come close to offsetting the material advantage of the attacking force.

Conclusions

- In the context of defensive aerial warfare, it seems, there is no advantage in mere concentration of numbers of aircraft in single engagements.
- Recent clashes have tended to obscure the fallacy of mass.

In a defensive air battle the lessons of history might have to be relearned yet again



- The lesson of 1940, 1965-7 and 1982 is that effective defensive concentration does not depend on mass, and that the effective unit of concentration can be as small as the individual aircraft.
- The development of tactics and strategy for a future air war requires a clear and detailed understanding of the evolution of the principles of war, from their inception to the present day, as a historical process.
- Such a study suggests that grave difficulties have resulted from the metaphor of mass, the doctrinal emphasis on the offensive, the assumption of symmetry between forces, and the incorporation of these in airpower theory.