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Iraq War Note: Intelligence Limits - Short Range Air Defense
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1. The Limits of US Intelligence and Surveillance Systems

Shock and awe have numerous technical limits and they need better coverage:

- o Satellites can use radar imaging, but need multispectral imaging for best results. There is far more persistent coverage and far better angles of coverage than in the Gulf War, but coverage is still limited and often predictable.

- o High flying reconnaissance systems like the U-2 and Global Hawk have the same problems and numbers and persistence are limited. It is hard to put a full mosaic together of the Baghdad area, and coverage of infantry, ordinary military vehicles, and towed artillery is extremely limited.

- o The JSTARS can detect major armored movements, not movement of disperse ordinary vehicles.

- o There are relatively few Predators and they have a very narrow window of vision and poor weather coverage.

- o Iraqi SIGINT and ELINT discipline is relatively good, and they make extensive use of land lines. Any Special Forces ability to read land lines is necessarily selective.

- o Low fliers like the Apache, Scout helicopters, A-10, etc., have narrow windows of coverage and are vulnerable to Iraq's short range air defenses.

- o Once forces move into civilian and built up areas they can hide vehicles and manpower in many buildings, and again, towed artillery, wheeled APCs/AFVs, and infantry in trucks are hard to distinguish.

- o Forces in the field spread out over square miles, and tanks can find a lot of shelter in the river delta. An Iraqi division can have 400-600 armored vehicles plus 400 trucks, and 100 artillery weapons or more. The best killing systems in the world cannot quickly or easily kills dug in and sheltered forces.

- o Owning the night is relative. Range is limited except for the most modern systems on the M-1 and M-2, range is difficult for systems other than armor and the attack helicopters, and n one owns the night in dust, rain, or short distance urban fighting.

- o BDA is virtually impossible for infantry, trucks, most tube artillery, and takes days for buildings where it is impossible to know who and what was inside.



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- o Decoys still work in many cases in spite of their lack of IR signature.
- o The more built-up and urban the area, the more limits exist.

The US still has the most advanced systems in the world, and they give it great advantages, but there are severe limits. They are compound by major data processing, data integration, and communications bandwidth problems and the fact so many individual systems are new and untested in terms of “netting” and “mosaic” analysis.

2. Iraqi Air Defenses

Iraqi air defenses have severe limits, a fact reflected in the survival of virtually every sortie flown over Iraq. It is important to remember, however, that no one can possibly locate the thousands of AA guns and manportable missile launchers, and hundreds of short-range vehicle mounted air defenses in Iraqi forces.

The heavy surface-to-air missile forces are backed by some 6,000 low-altitude anti-aircraft (AA) guns, and thousands of SA-8b, SA-11, and SA-13 short and medium range missiles - some mounted on vehicles and some manportable. The Strela 2 and 10 (SA-7 and SA-13) are used for terminal defense of key buildings. Iraq has learned to rapidly move its fire units and sensors, use urban cover and decoys, use “pop-on radar” guidance techniques, and optical tracking.

As the US closes in on Baghdad, or fighting takes place in rear areas, helicopters will often be vulnerable in spite of armor and IR countermeasures, and so may aircraft like the A-10, which have to fly low to kill. There may also be silent, concealed rings of longer range surface-to-air missiles around Baghdad being reserved for the final battle for the city.