

TACWAR # 238  
25 April 77

## STRIKE OPTIONS COMPARISON (SOC) STUDY

(Comments on)

HCBrown

### 1. General Rationale of SOC Study

The study proceeded to its conclusions by the following steps:

a) By use of the Lulejian I model curves were constructed to portray the effect on FEBA movement and aircraft attrition (both sides) of early destruction, to various levels, of a selected list of counter-air targets. Logistics interdiction targets were not considered because their effect would be inconsequential in the early stages of the conflict.

b) Based on the above, an objective was established of destroying (to 70% kill) a very large number of targets at distances of up to 650 km from the West German border. These targets included air fields, SAM sites, and GCI radars. On the airfields hangarages, revetted aircraft, and runways/taxi-ways were attacked.

Concurrently, a list of candidate weapons systems was developed.

c) The terminal effectiveness of each weapon against each target was established. Although no detailed data is furnished, it appears this was probably done by a rather crude "cookie-cutter" calculation.

d) Penetration studies performed by CALSPAN Corp. established the losses to air defense and airborne interceptors. Again the models used are not documented in the report available. One significant finding was that substantial raid sizes enhance penetration by a saturation effect.

e) Life cycle costs were computed, and used to rank the candidate systems as to cost-effectiveness in performing the pre-established task.

## 2. Admitted Study Deficiencies

The study admits to a list of deficiencies which in itself should preclude the study being taken seriously. These include:

- a) Only fixed targets were considered.
- b) No Close Air Support (CAS) or battlefield Interdiction missions were included.
- c) No consideration was given to C<sup>3</sup> and reconnaissance requirements for deep strike.
- d) Operational employment of the various systems was not considered in detail.
- e) No other scenarios were included.

## 3. Additional Comments

a) The connection between attrition of Red air assets and FEBA movement is buried somewhere in the depths of the Lulejian model<sup>1</sup>. No one, including the U.S. Army, objects in principle to the initial use of air power to gain air superiority at some initial sacrifice of support to the ground forces. However, one would suspect that destruction of 70% of Red air and air defense assets may be an overkill.

The effect of varying amounts of CAS on progress of the ground battle is imperfectly understood; it is deceptive to express the results of this study in terms of "FEBA movement".

b) The effect of the prescribed target destruction on air superiority is not explained in any detail; nor is there any indication as to what would be accomplished if a different target list were used. This is particularly pertinent in regard to range requirements; target density falls considerably before the maximum range of 650 km is reached.

The utility of attacking runways, taxi-ways, and possibly untenanted hangarages or revetments has never been established. The same is true for area-wide suppression of SAM's and GCI's. The apparent assumption that 70% attrition of these facilities causes a corresponding decline in enemy aircraft sorties is quite questionable. Apparently no credit was given for recovery of these facilities.

---

<sup>1</sup> See TACWAR 149. Lulejian I Theater-Level Model -- Comments On. 1 July 1975

c) The weapon effectiveness calculations are patently ridiculous. Apparently no target location error was considered, nor was there any attempt to consider the problem of selection of aim-point (e.g., for hangarettes) such that each weapon addresses a different target. In general terms each target requires one of the more favored weapons, thus holding down the total cost of the operation. Competitor weapons are made to appear worse by doubling the c.e.p. or halving the warhead weight or both.

d) The survivability procedures are not yet completely documented, and thus cannot be critiqued in detail. Some of the assumptions quoted in the available write-up appear highly questionable. The net effect appears to be to penalize the less -favored competitive systems. The sensitivity studies seem to confirm this; the other systems become much more competitive when the defense level is reduced by 50%.

e) The Life-cycle costs for the favored systems are all roughly equal; cost is not really an important factor in selection - that is determined by the effectiveness and survivability calculations. Some of the shorter-range competitors, at 1/4 and 1/2 the price, show up reasonably well; they are apparently eliminated by the desired maximum range.

#### 4. Possible Remedial Action

Certainly this SOC study should be viewed with deep suspicion; no one of its conclusions should be used as a guide unless and until supported by much more thorough analysis.

Studies should not link ground movement to attrition of enemy air assets (especially fixed assets) until the influence of CAS on ground movement is more thoroughly explored. Our research effort on CASM (Close Air Support Missile Study), if this contract is won, will address this subject among others.

Prior to any more discussion of means to accomplish the end, it should be worthwhile to examine the end itself. It has been suggested for several years that we should conduct a study on the value of deep strike. Targets considered would include counter-air, deep interdiction, and strategic targets.

Once some relative value of such targets, as a function of distance beyond FEBA, was established, one could consider re-doing the SOC study in a less biased fashion

Due to work on the ARM and Reflex Studies, we can comment fairly knowledgeably on the effectiveness of attacks on SAM's and GCI's . The same is not true for airfields - we need some work in this area.

Finally, each of the proposed systems and its operational employment needs to be considered in the context of a total "air war". This would be a major undertaking.