

MEMORANDUM

#9 M-863

TO: L. E. Root  
 FROM: A. C. Reed  
 SUBJECT: Continuation of Report on Visit to ADC  
 COPIES TO: J. E. Lipp, L. A. Young, J. D. Williams, P. R. Collotta, L. W. Paxson

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The following is a continuation of our visit to ADC:

Gen. Saville defined AD. He said that our defense against air attack involved:

1. AD
2. Counter air forces, getting enemy air force at home by long range bombing.
3. Defense against aircraft launched from enemy submarines.

Saville's job is only No. 1, AD. This includes the Navy and AAA. The Navy is completely in accord and is on ADC bandwagon. Army is very aloof and cooperates in a sneaky manner.

I will try to clarify my remarks on Saville's concept:  $F = (T, A, O, E)$

He is giving it to us for what it is worth. It may or may not be his own, but he and others have given it some considerable thought. He admits that it may not be correct, and T, A, O, and E may not be mutually independent. (But he is so convinced that there is substantial truth in it that he passes it on to us for what it is worth / ACH.)

He then says take mathematics of zero sum game and derive curves, or systems of curves, or charts etc. that Saville can understand. (He does all this with an open mind and maybe you can't do it, but it appears so powerful a tool that it is worth a serious try.)

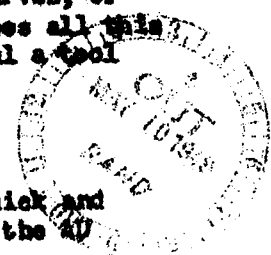
Now some comment on T, A, O, and E.

T may be defined indirectly by: "Enemy may be planning a quick and dirty or long drawn out war". How do these different concepts affect the AD force required and ditto for gradations between?

A may be defined as the geographical area to be defended. For various levels of value what areas should be defended and how do the corresponding various areas affect AD force required. If value B is protected, what areas require defense and what AD force is required. For value B ditto ----- value X.

O is the AD objective. Gen. Saville thinks it is attrition. I think it is too, guided by optimum game strategy and tactics. (It is the killing of enemy bombers in the most efficient way so that it allows the least enemy damage to us. Air Force dollars should be divided so that AD saves as much/dollar as SAC destroys per dollar/ACH.) Gen. Saville feels that the minimum is that necessary to keep up home morale.

E = enemy air force. What is its strength, what percent available at any one time, how will he deploy it, what strategy, what tactics, what is the performance of his equipment and counter measures, how has he divided between offense



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and defense, how much can be handled by counter air force vs. AD, etc.

These are the questions to which Gen. Saville thinks he needs answers, not interceptor spec. and evaluation. Actually we have to crawl before we can run, but his point is well taken because we should keep our crawling period to a minimum; we had better start running before becoming *hol Pattons*.

Gen. Saville said that he was not interested in all the details of our analytical and study processes, but he did want a complete statement of all assumptions with complete reasons therefor, e.g., he isn't interested in our tools but he is interested in the materials we use and the products and what they mean to him. This is not only probably typical of the use of our work but is sound logic.

Our visit to ADC obviously was dominated by Gen. Saville and there are two likely but unhealthy reactions to this:

1. We are running our own show, not Gen. Saville.
2. He for sure knows what he is talking about and we had better follow his cue or make fools of ourselves.

Actually we can carry the ball and still do both 1 and 2 without weakening our offense, i.e., make full use of all ideas coming from ADC but call our own signals and use our own system of plays.

More on E: Relative enemy capabilities, and effectiveness of one one-way vs. two-way attack, and refueling vs. non-refueling, e.g., bomber may fly much faster and higher at target for one-way or for refueling on the return than for two-way without refueling.

General Saville thinks his most important specific problems are:

1. Low altitude enemy attack
2. ABW (see Young)
3. AEW (see Young) and other CW.

He feels that the high altitude interceptor is a straight forward problem and that the solution will come readily if the people involved are smart at all.

Z He feels that the low altitude problem is a terrific one. He suspects that local defense alone against low altitude attack is economically unsound, and that a fighter and fighter defense system must be developed against low altitude attack. He judges that this problem is the most important specific one for AD. He defines it as defense against attacks below 3-4000'. Important as it is, he still feels that the general problem (his F = (T,A,O,E) ) is by far his most important problem.

(Per ACR) The most difficult parts of the all weather low altitude problem are:

1. Early warning (maybe AEW's primary job)
2. Usable at low altitude
3. AI usable at low altitude in banks and dives as well as level or equivalent.

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4. GCI usable at low altitude (for all necessary degrees of traffic)
5. How to deploy his 's and other defenses on the ground.
6. Air tactics
7. Effective armament (he wants air-air GM but unless radar or equivalent seeker is usable at low altitude, a seeker can't be used, nor can any kind of guidance that is inactivated by proximity of the ground at any expected angle of bank or dive).
8. Fire control
9. Percent division between low altitude and high altitude AD
10. Counter measures (confusion of enemy navigation, etc.)
11. Navigation technique and equipment
12. Local defense measures (AAA, fire control, etc.)

General Saville intends to try out civilian ground observer system ("jiggers" system) but this is useful only after penetration and not as BW

He sees as possible EW solutions:

1. AEW
2. Radar or other warning system that curves around the earth.
3. CHL

II. Gen. Saville judges his second important specific problem is AEW. He feels that AEW is not reliable enough now, so will wait for development. He sees its advantages:

1. Mobility, tactical flexibility
2. Low altitude EW (may be the only way)
3. added means for EW over water.

He thinks economic studies to date do not allow for the advantages (if it has advantages you expect to pay a price; is it worth it?).

He needs a means of evaluating AEW because he is under pressure from the President (Truman). Gen. Gurnoff of BSA (C of B) has sold AEW to Truman. Gen. Saville would like our group of four to talk to Loren Jones, Chief Sales Engineer of RCA, Camden, New Jersey (LJH says FRC has already talked to him; hence steer clear. We feel that we have to get into AEW and anybody who has seriously thought about it stands a good chance of being a good source of information. Hence we think we ought to talk to Jones and told Gen. Saville we would get in touch with him and probably see him in Washington, D.C. sometime on 16 May. As soon as you get this, call me and let me know what you think because at present Gen. Saville expects us to see Jones. We have not called Jones yet and will wait for your call).

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III. Third important specific problem is relative enemy capability and value of one-way vs. two-way bomber attack (plus refueling and similar methods)/Gen. Saville.

IV. Fourth important specific problem is counter measures and anti-aircraft measures (probably mostly ECM and anti-ECM).

I'll out this here and send more later.

A. C. Reed

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