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PART 4: SECTION 3

CHAPTER 1

TARGET SELECTION AND ANALYSIS

Introduction

1. This section outlines the weapons aspect of the principles involved in planning an air attack. There are three stages :—

- (a) Target selection and analysis.
- (b) Weapon effectiveness and selection.
- (c) Calculation of the force required to achieve the aim.

Target Selection

2. The target system to be attacked is selected at the highest level, after a study of the war potential and economic structure of the enemy. The target systems selected will be those which will most adversely affect the enemy's ability to sustain the war. Examples of target systems selected in the Second World War were the oil industry, and ball-bearing and fighter aircraft factories.

3. Having selected the *target systems* to be attacked, the next stage is to examine carefully the *target elements* within the target systems and to decide the means of achieving the ultimate aim which, in the case of a factory, may vary from complete destruction to the loss of a few months' production ; then to select, in terms of importance and vulnerability, those target elements the destruction of which will cripple the target system to the greatest extent with the least expenditure of effort.

4. An example of a target system and the elements within it is provided by enemy submarines. One element is the factory producing submarine sub-assemblies, another is the submarine main assembly and construction yards, others are completed submarines, docks, submarine pens, and submarines actively engaged in operations. The attack against this system can be directed at any point throughout the chain. If an immediate effect is required, the attack on submarines at sea would pay the best dividend, but the problem of location makes the target a relatively difficult one. For a longer term effect the attack on submarine reserves in ports might be recommended ; but if they are in pens which are well protected by reinforced concrete walls and roofs they may prove uneconomical and difficult to attack. Again,

destruction of submarines under construction, which augment the war reserves, and the attendant assembly shops, would not have any effect within the immediate future, but would have an effect on the enemy's ability to sustain the submarine war at a later date. The attack on sub-assembly production would most likely only delay the production of submarines.

5. The choice of the element or elements of any target system selected for attack are determined by air staff operational policy and depend on such factors as time, the importance of the target system to the enemy, the enemy defences, and the ease or otherwise with which repairs can be made or replacements procured.

Target Analysis

6. When target elements have been selected, the final stage is a detailed analysis of each target element. The various components comprising the target elements are examined to decide their relative importance within the physical composition of the target, and their vulnerability related to the degree of damage to obtain the required effect. An assessment is also made of the types of missiles available for use against the components, so that the best weapon/fuse combination can be chosen to achieve the purpose of the attack by the most economical means.

7. The information needed for the analysis of the structure and vulnerability of a target is derived largely from aerial photography and intelligence reports. Much standardization exists in industrial and building processes in countries of comparable economic development, therefore the departments concerned with industrial and air intelligence can define fairly accurately the structure of the buildings, layout of the plant, and general processes carried out by a particular factory. A target such as an oil refinery can readily be divided into elements. An oil refinery consists of the distillation plant containing stills and fractionating columns (the heart of the refinery), the cracking plant, and the boiler and machinery buildings, all of which are interconnected by a mass of pipelines and wiring. Critical damage to the stills and fractionating

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columns of the distillation unit would prevent the plant from operating. As an alternative, the cracking plant may prove more economical to attack as it is usually more vulnerable.

8. Selection of the target elements must be a compromise between the importance of the element and its vulnerability ; a certain element may be vitally important to the operation of the

target but it may also be most difficult to attack economically. Another element may be not quite as important, but vulnerable to economical attack.

9. Analysis of a target element must follow the same lines as those used to decide the type of missile or combination of missiles to be used in the attack.

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