

CHAPTER II

ESTIMATION AND APPLICATION OF CHARGES

SECTION 4

GENERAL

0401. **Degree of Accuracy.** Normally it is sufficient to calculate the charge to the nearest cartridge or slab. In large charges, running into hundreds of pounds, calculations may be to the nearest tin or box.

0402. **Hasty Calculations.** These are summarized in Section 5. They aim at achieving an essential minimum of effective damage and provide a generous answer in all cases. They are the calculations normally used for operational demolitions.

0403. **Deliberate Calculations.** These are summarized in section 6. They aim at achieving the maximum effective damage and are used when there is ample time to make and check detailed measurements of the target and to make and check detailed calculations, or when strict economy of explosives is necessary. They include adequate factors of safety, but the calculated charge should only be reduced if there is an overriding necessity to avoid damage to nearby property or to reduce the weight of explosives carried on a special mission. Furthermore, such reduction should only be made if;

- a. Preliminary trial on a similar target has proved successful or
- b. Initial failure can be made good by a second attempt.

0404. **Explosive Factors.** For deliberate calculations, the formulae are based on the use of PE3A as the plastic explosive and CE/TNT as the slab explosive. If explosives other than these are to be used calculations should be adjusted by the application of the requisite explosive factor obtained from table 11. No adjustment is necessary in hasty calculations.

Table 11.-Explosive Factors

SerNo	Explosive (close packed)	Cutting or breaching charges	Borehole or footing charges	Mined pressure or concussion charges
(a)	(b)	(c)	(d)	(e)
1	PE (2, 3 or 3A)..	1	1	1
2	Nobels 852	1	1	1
3	Nobels 808	4/3	5/4	5/4
4	CE/TNT.....	1	1	1
5	RDX/TNT	1	1	1
6	TNT (cast or pressed)	5/4	5/4	5/4
7	TNT (loose flake)	3/2	5/4	5/4
8	Ammonal	2	5/4	1
9	Amatol	2	5/4	1
10	Blasting gelatine	2	1	1
11	Gelignite	2	1	1
12	Polar gelignite ...	2	1	1
13	Dynamite	2	1	1
14	Cordite	-	1*	1*
15	Tetrytol** ...	6/5	6/5	6/5
16	Slab C 2**	4/3	4/3	4/3
17	Slab C 3**	1	1	1
18	Slab C 4**	1	1	1

*Must be well tamped.

**US Army explosives.

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