

Fire Control

T 7 - Specific types of firing

References and further reading :

MO ČR. *Bojové použití dělostřelectva Armády České republiky*. Dě1-1-1. Praha: 2002. 92 s.

MO ČR. *Dělostřelecký průzkum, topograficko-geodetická a meteorologická příprava dělostřelectva všeobecné palebné podpory*. Dě1-6-4. Praha: 1996. 144 s.

MO ČR. *Palebná služba pozemního dělostřelectva*. Dě1-3-1. Praha: 1995. 185 s.

MO ČR. *Doktrína Armády České republiky*. Praha: 2004. 148 s.

References and further reading :

MO ČR. *Bezpečnostní strategie České republiky*. Praha: 2003. 22 s.

AAP-6 (STANAG 3680), *NATO glossary of terms and definitions, Přehled termínů a definic používaných v NATO*. Brusel: NSA, april 2007.

SOBARŇA, M., POTUŽÁK, L., VONDRÁK, J., aj. *Základní pojmový aparát pozemního dělostřelectva AČR*. Brno: Univerzita obrany, 2011. 186 s.

Pravidla střelby a řízení palby pozemního dělostřelectva (dělo, četa, baterie, oddíl). Pub-74-14-01. Vyškov: Správa doktrín Ředitelství výcviku a doktrín, 2007. 256 s.

Course Objectives:

Explain the principles and procedures during each of section of preparation of artillery fire control.

Content:

- 1) Determining elements for firing full, shortened and simplified preparation
- 2) Jump in the distance

1) Determining elements for firing full, shortened and simplified preparation

Artillery firing in the performance of tasks fire rectangular (linear) objective:

- ☐ fully loaded batteries;
- ☐ Scale batteries;
- ☐ The allocation of goals between the battery;
- ☐ The allocation of target segments (lines) between the batteries.

Firing batteries firing in the performance of tasks fire rectangular (linear) objective:

- ☐ fully loaded squads;
- ☐ Squads scale;
- ☐ The allocation of goals between the platoon;
- ☐ The allocation of target segments (lines) between the squads.

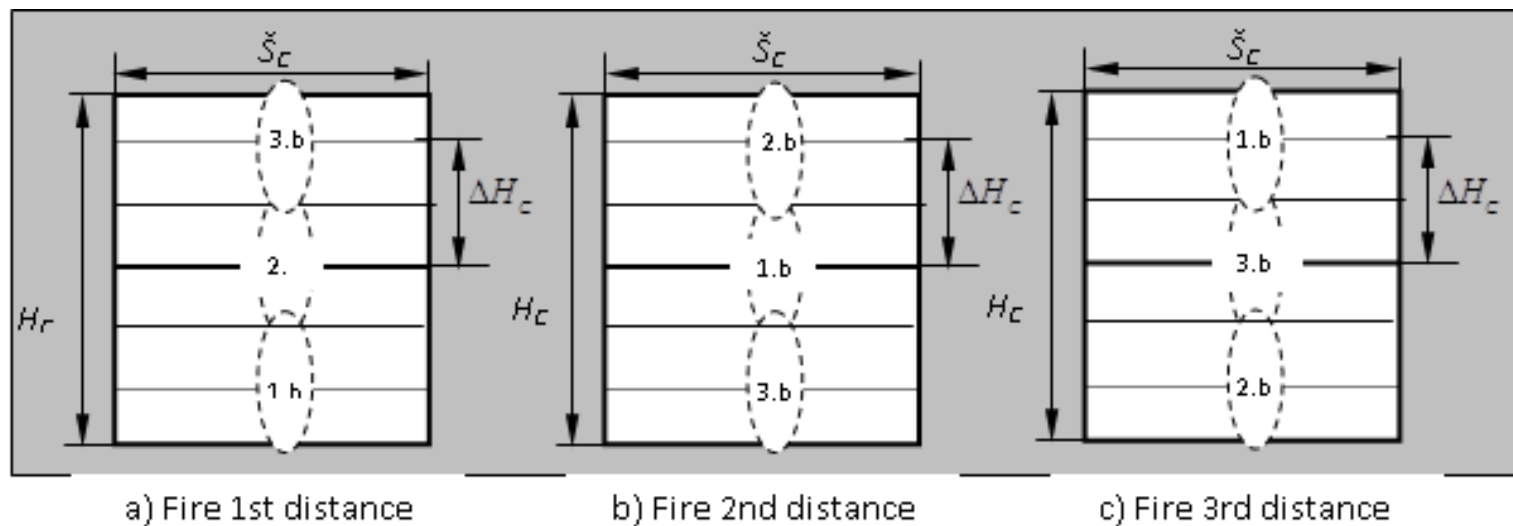
1) Determining elements for firing full, shortened and simplified preparation

Table: T-1.2 Fire manner and order of distances - the section on three batteries

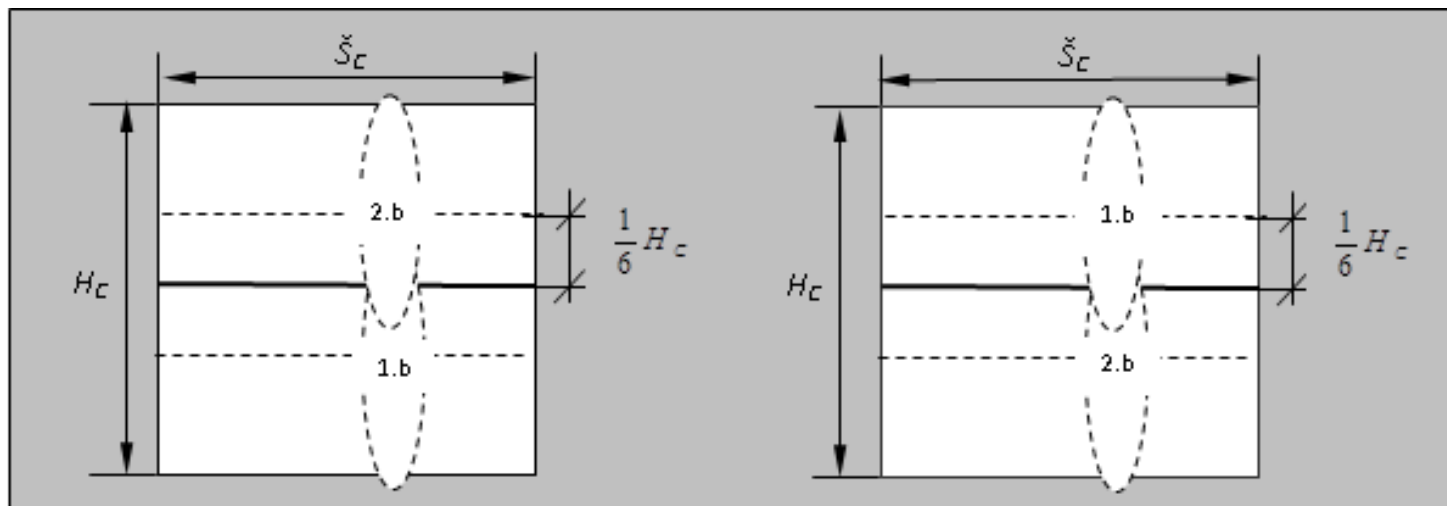
Number of batteries	The order the change of distance		
	1st length of sight	2nd length of sight	3rd length of sight
first	$D_P^C - \Delta H_C$	D_P^C	$D_P^C + \Delta H_C$
second	D_P^C	$D_P^C + \Delta H_C$	$D_P^C - \Delta H_C$
third	$D_P^C + \Delta H_C$	$D_P^C - \Delta H_C$	D_P^C

Note: D_P^C – calculated sight distance to center target;

1) Determining elements for firing full, shortened and simplified preparation



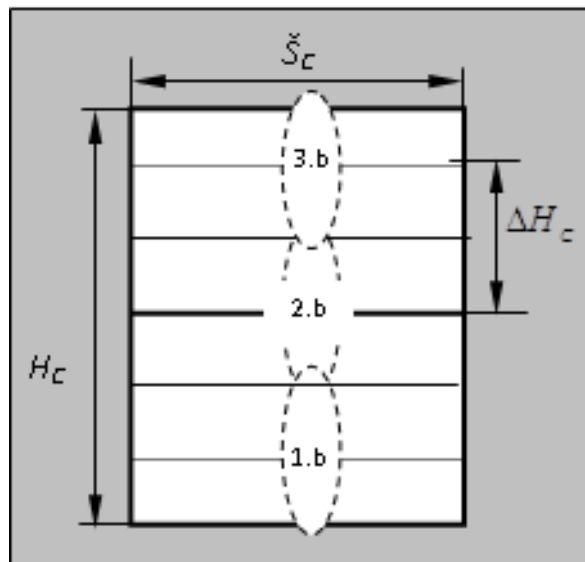
1) Determining elements for firing full, shortened and simplified preparation



a) Shooting 1st sight distance

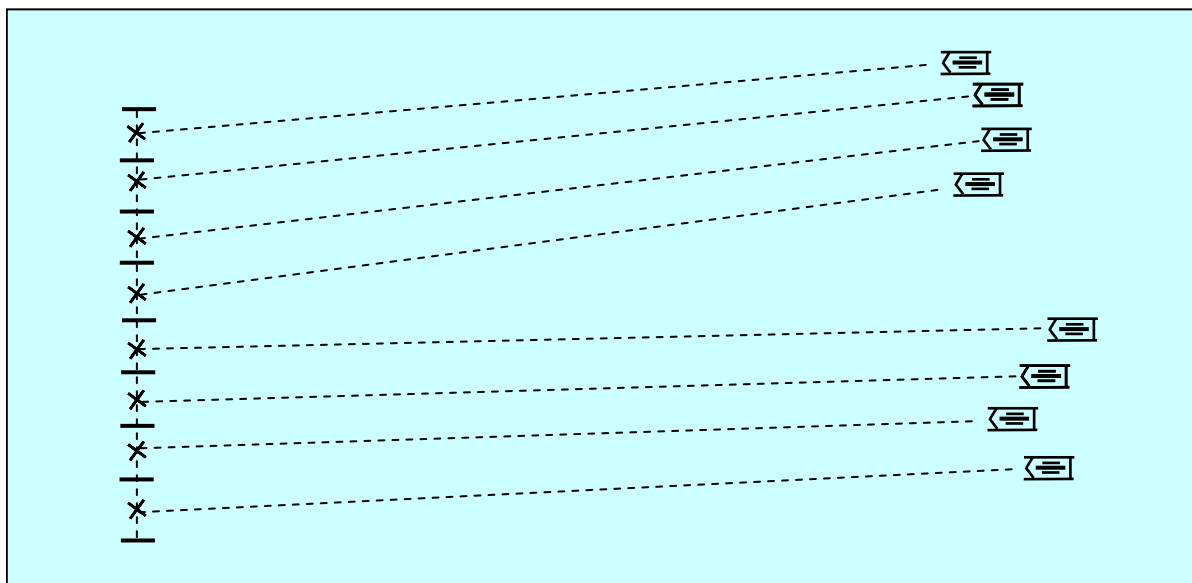
b) Shooting 2nd sight distance

1) Determining elements for firing full, shortened and simplified preparation



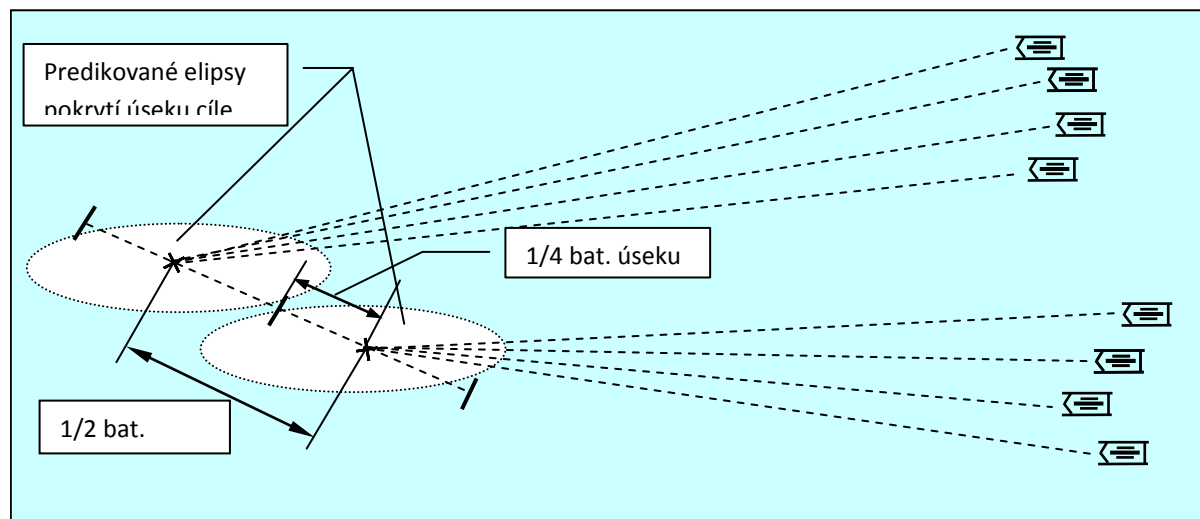
2) Jump in the distance

1st Front movement

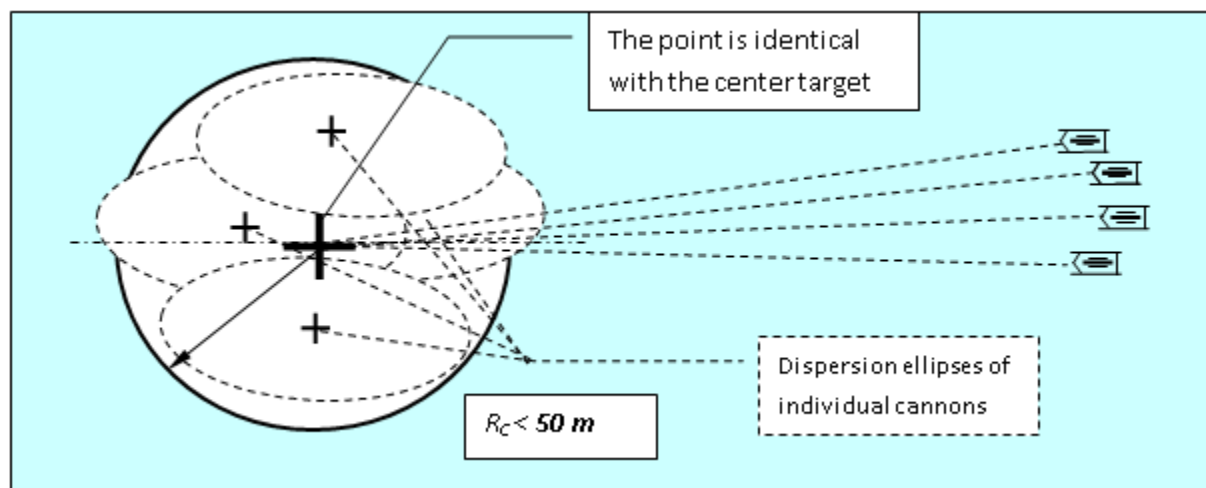


2) Jump in the distance

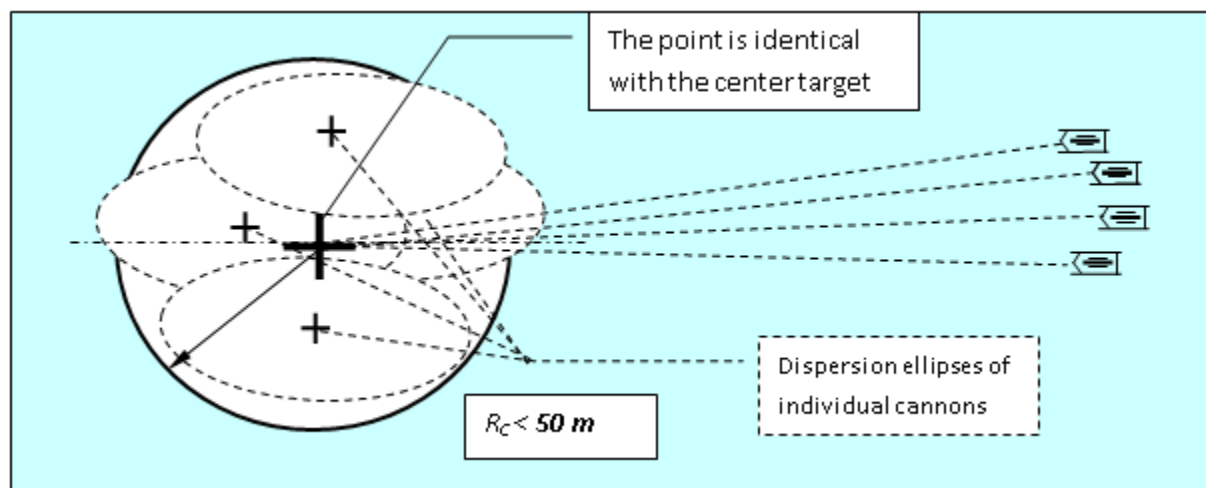
2nd Lateral movement



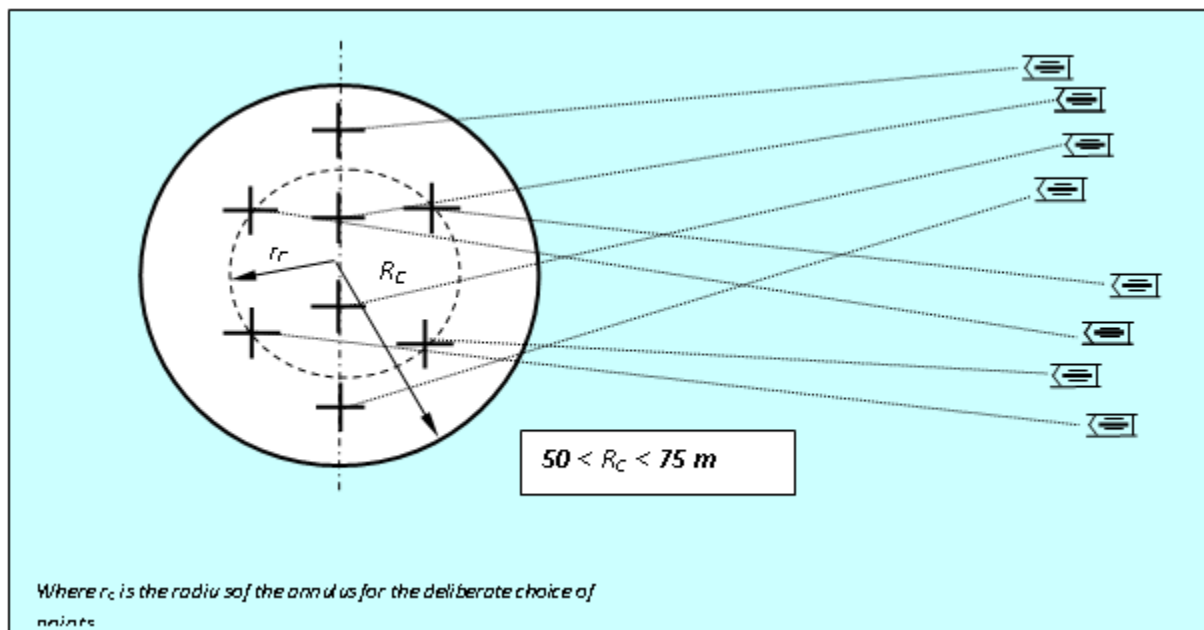
2) Jump in the distance



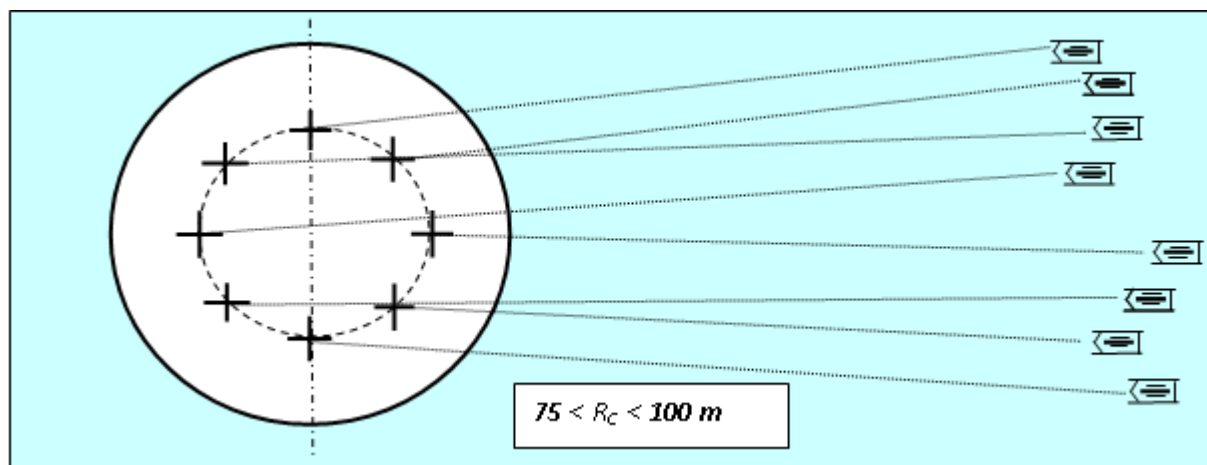
2) Jump in the distance



2) Jump in the distance



2) Jump in the distance



2) Jump in the distance

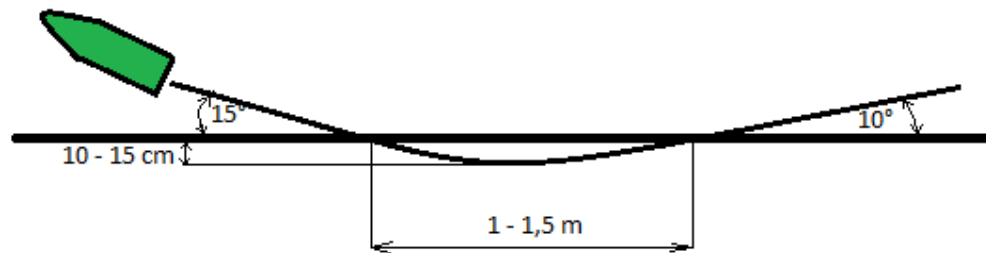


Fig. 2 Ricochets at angles of impact from 0° to 10°

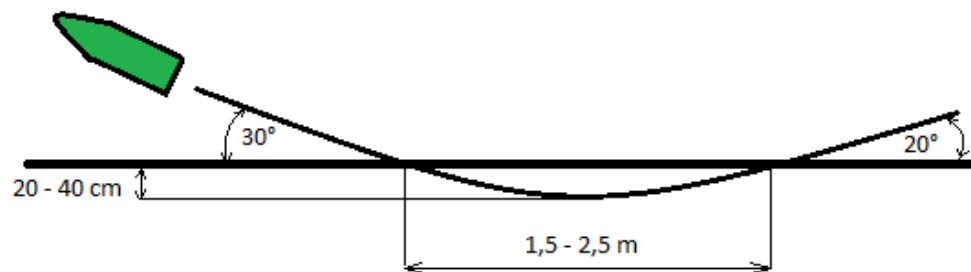
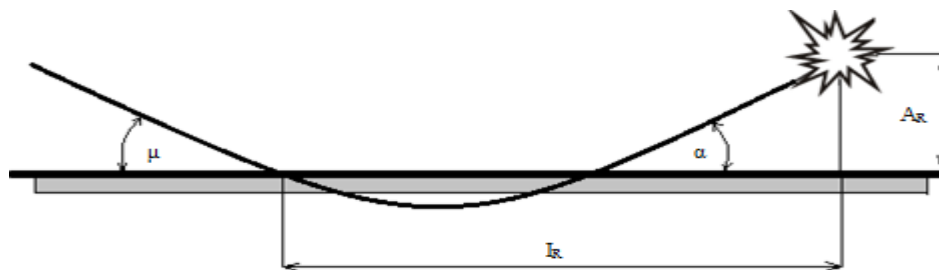
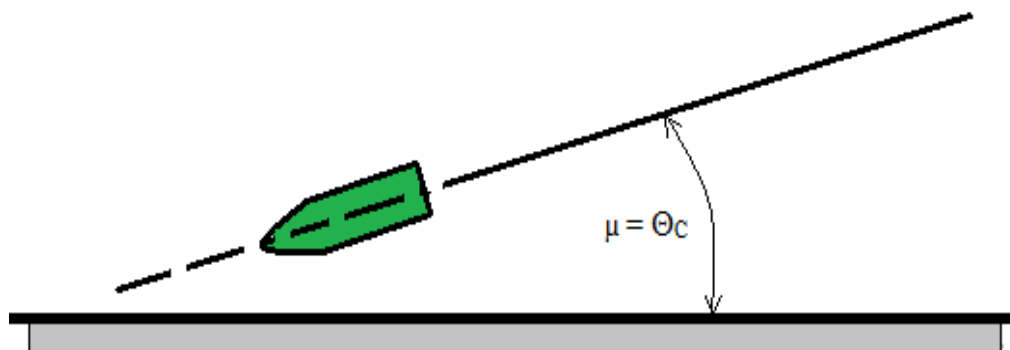


Fig. 3 Ricochets at angles of impact from 10° to 20°

2) Jump in the distance



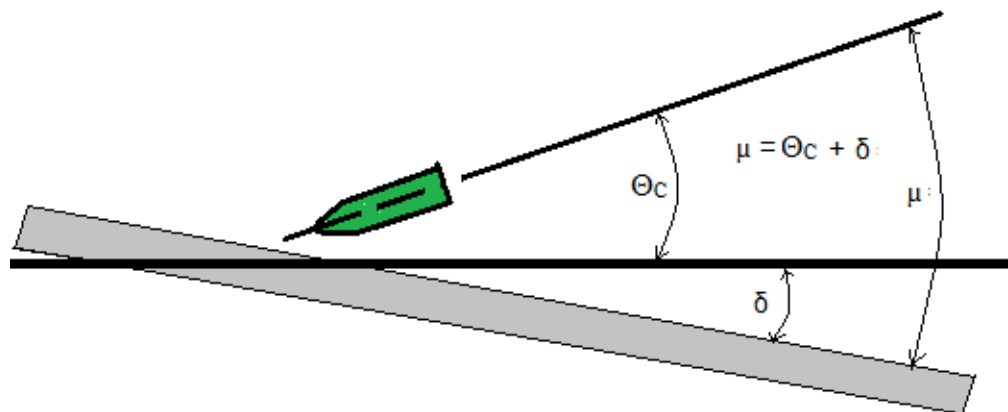
A_R – height of burst, I_R – interval of burst, μ - angles of impact, α – angles of reflection



Θ_C – angles of impact, μ - angles of reflection

Fig. 5 Angles of impact from when firing at a horizontal terrain

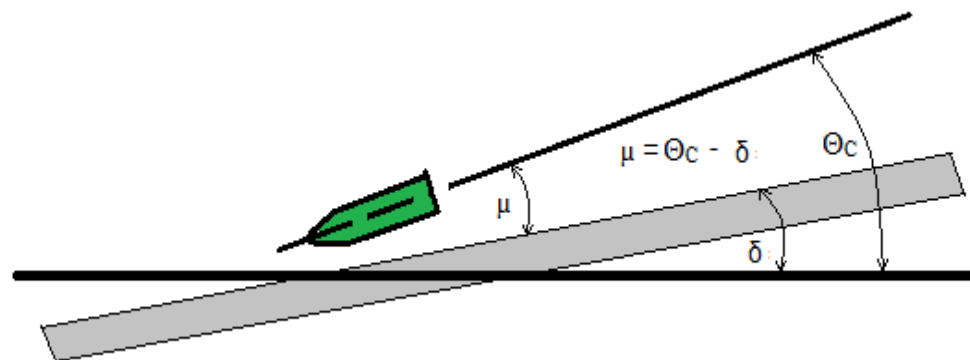
2) Jump in the distance



Θ_c – angles of range, μ - angles of impact, δ – angles of hill

Fig. 5 Angles of impact from when firing at a facing terrain

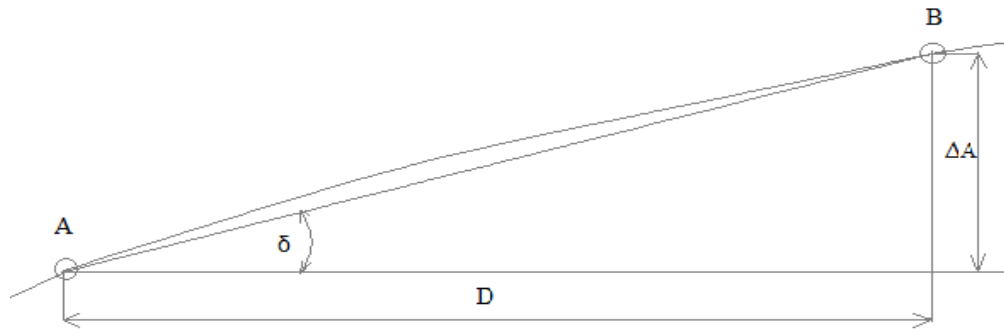
2) Jump in the distance



Θ_c – angles of range, μ - angles of impact, δ – angles of hill

Fig. 6 Angles of impact from when firing at a retrograde terrain

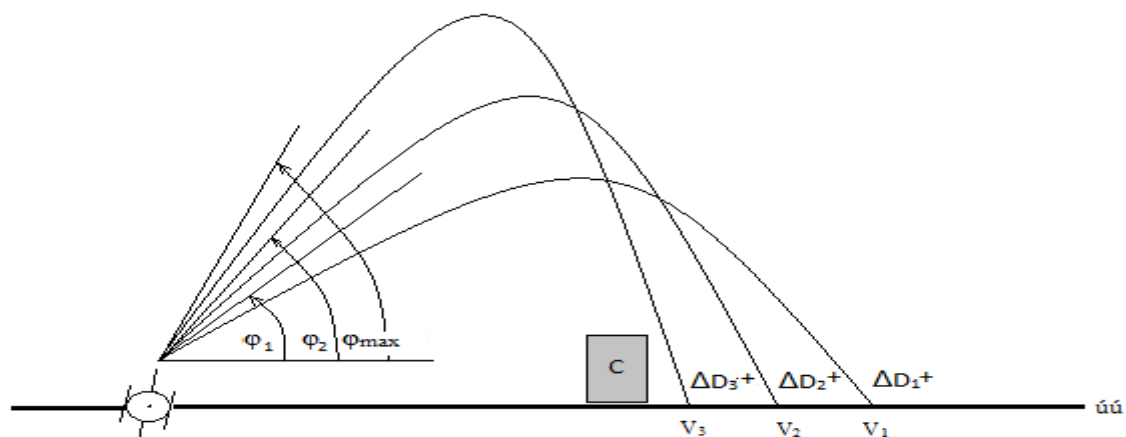
2) Jump in the distance



ΔA – a cant, D – distance between contours, δ – angle of slope

Fig. 7 Diagram determine elevation and distance between contours

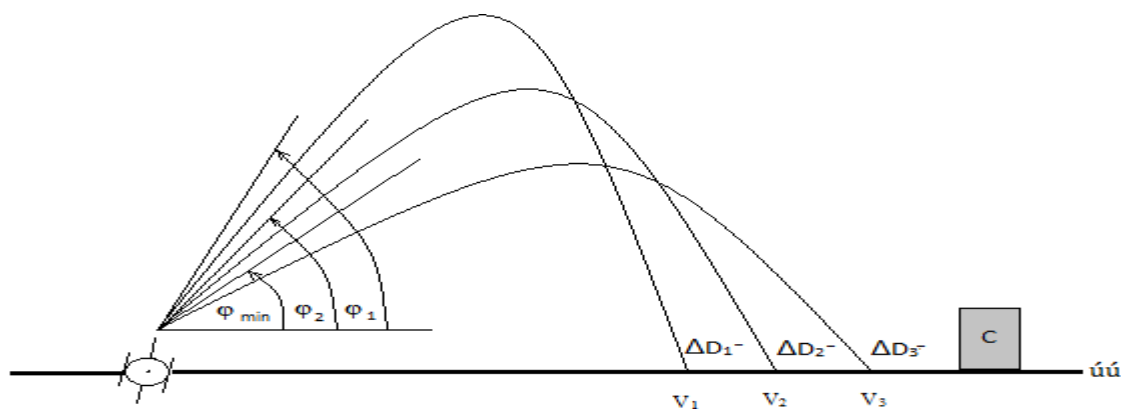
2) Jump in the distance



úú – level estuary, $\phi_{\max}$ – the angle of elevation for the explosion V_3 , ϕ_1 – the angle of elevation for the explosion V_1 , ϕ_2 – the angle of elevation for the explosion V_2 , C – target

Fig. 8 Renovation (reducing) the firing range by increasing elevation (sight distance)

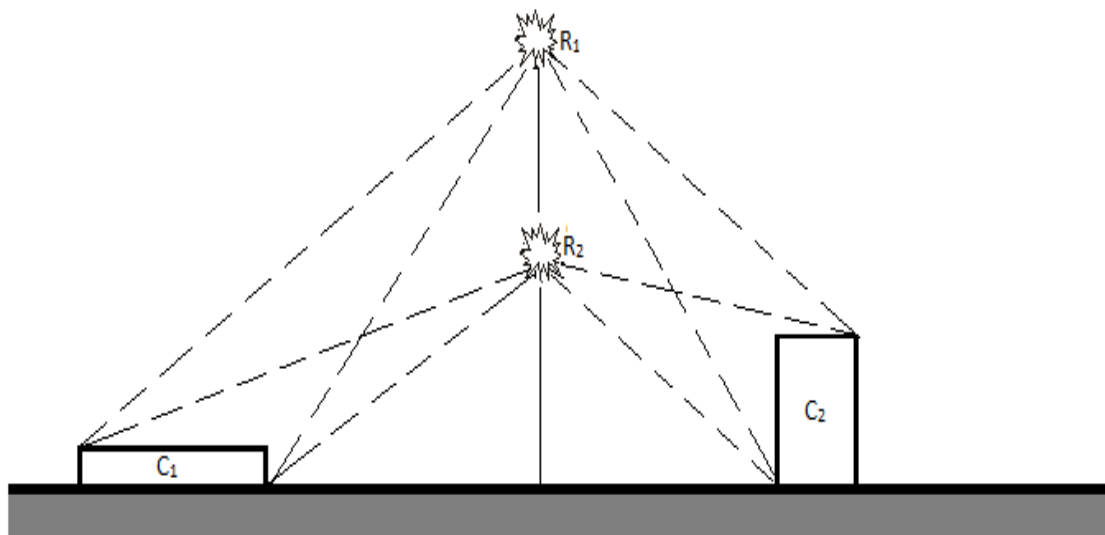
2) Jump in the distance



úú – level estuary, $\varphi_{\min}$ – the angle of elevation for the explosion V3, φ_1 – the angle of elevation for the explosion V1, φ_2 – the angle of elevation for the explosion V2, C – target

Fig. 9 Renovation (reducing) the firing range by increasing elevation (sight distance)

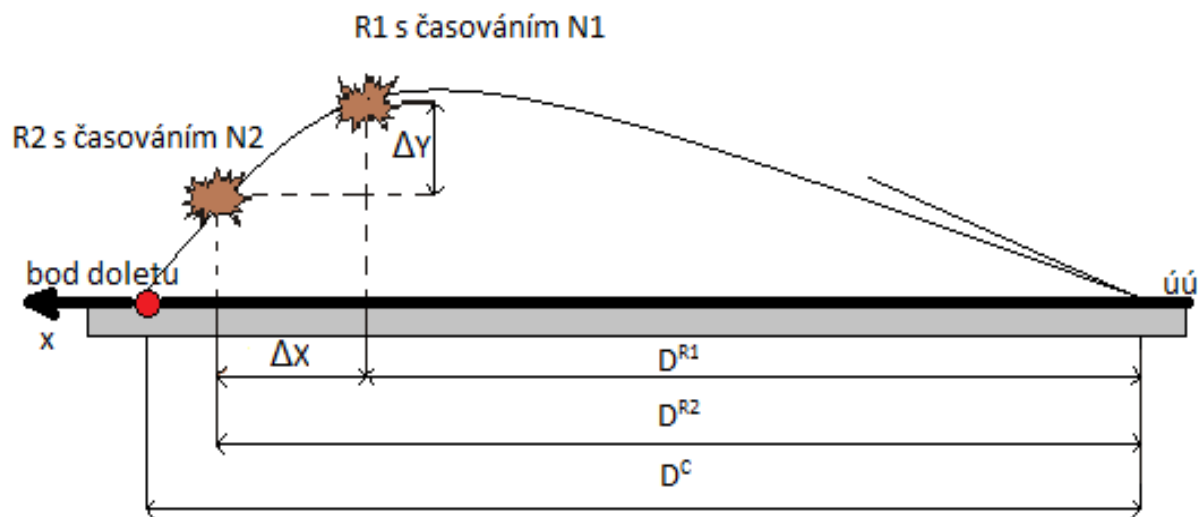
2) Jump in the distance



$R_{1,2}$ – scattering, $C_{1,2}$ – target

Fig. 10 The influence of the height of burst at high and low target

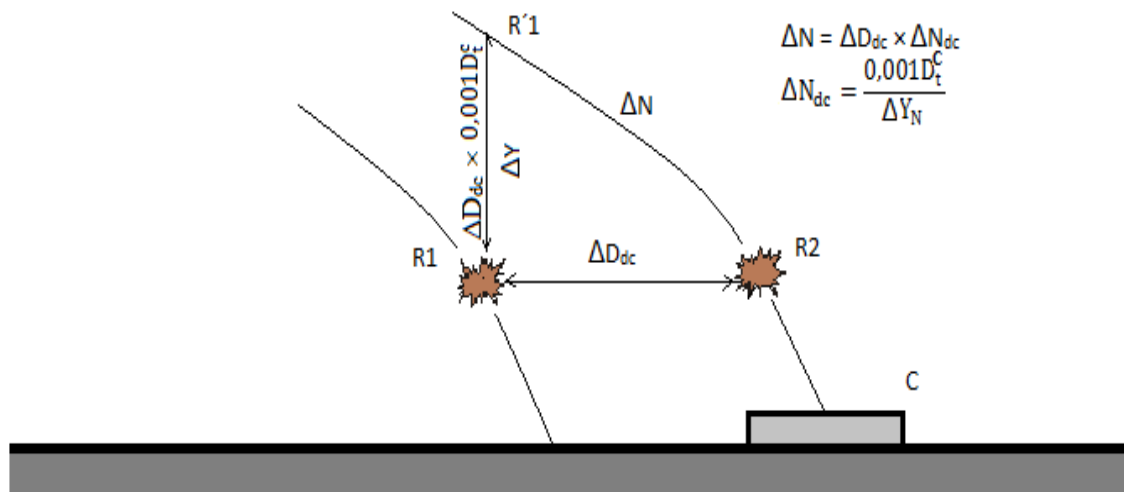
2) Jump in the distance



ΔX – difference distances, ΔY – height difference, D^{R1}, D^{R2}, D^C – distance burst R1, R2 and objectives, úú – level estuary, x – direction

Fig. 11 The repair height of burst by timing change

2) Jump in the distance



R1 – bursty, R2 – burst after changing distance and timing, R'1 – burst after changing the distance, ΔY – height difference, ΔN – fix timing, ΔN_{dc} – coefficient of variation of timing, ΔY_N – change table burst height (m), ΔD_{dc} – repair sight distance, C – target

Fig. 12 The repair distance of burst by timing change

List of tasks for students:

- ☐ Understand principle of adjust fire, realization of fire and correction of effective fire of each of specific types of firing.
- ☐ To acquire the peculiarity during preparation of fire element of determining of specific types of firing.
- ☐ To master the rules and procedures during specific types of firing.