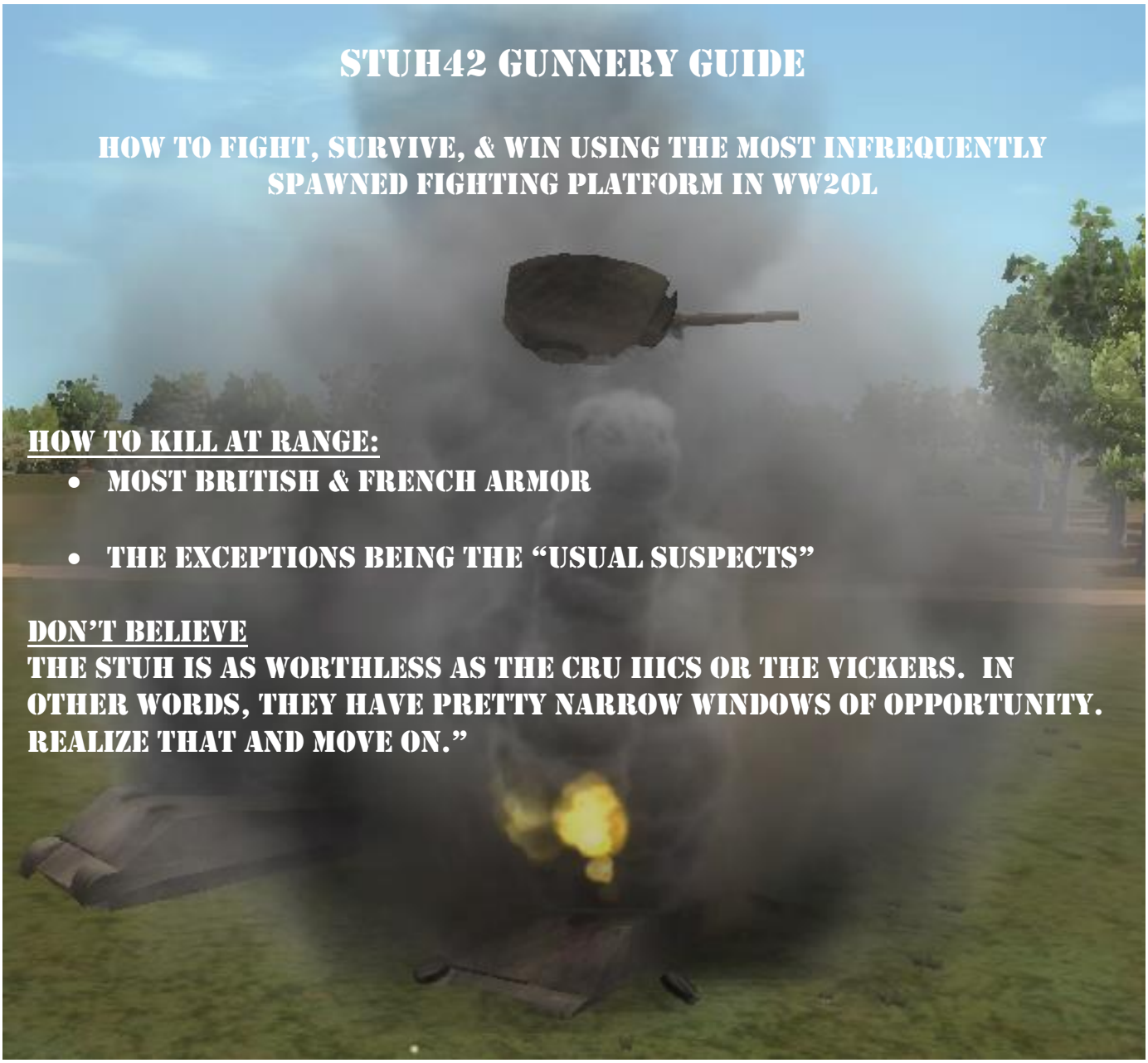


STUH42 GUNNERY GUIDE

HOW TO FIGHT, SURVIVE, & WIN USING THE MOST INFREQUENTLY SPAWNED FIGHTING PLATFORM IN WW2OL

HOW TO KILL AT RANGE:

- MOST BRITISH & FRENCH ARMOR
- THE EXCEPTIONS BEING THE "USUAL SUSPECTS"

DON'T BELIEVE

THE STUH IS AS WORTHLESS AS THE CRU IIICS OR THE VICKERS. IN OTHER WORDS, THEY HAVE PRETTY NARROW WINDOWS OF OPPORTUNITY. REALIZE THAT AND MOVE ON."

STUH42 GUNNERY GUIDE INDEX

Section 1: Introduction of the StuH42

Welcome to the StuH42 Gunnery Guide. It is hoped that this guide will enable you to effectively use the platform in its primary role of infantry support whether that be suppressive fire on an enemy controlled area that friendly infantry are assaulting, the destruction of buildings to clear sight lines or deprive the enemy a vantage point for reconnaissance to even the unexpected role as a tank destroyer of limited means (due to a small ammo load out).

This guide covers a great many things but it will deal quite extensively how the StuH42 can kill enemy armor on the field of battle. It can be done but it is not an encounter you should readily seek out. The information in this guide is to allow you to defend yourself if an unsuspecting Allied tanker wanders across your field of fire and there is no other weapons system able to do the job. In most cases, YOU can deliver the coup de grace to that tanker but you need to know at what range, what angle of attack and where to shoot to be successful.

This guide will hopefully do that to your satisfaction.

There are a number of pieces of information that are being consolidated within this gunnery guide as I have spent months firing, gathering data, and brain-storming on how to effectively call for/adjust and deploy indirect fire in WW2OL. Currently server-tracked objects (STO) are only applicable for the mortars, destroyers (to some degree) and bombers. It is my hope that one day "soon™" the STO feature will be coded for the indirect fire (IDF) close support platforms which are either ALREADY in game or are being developed for future roll-out.

My plan is to be ready when that day comes but if it never does . . . it's been fun researching and working on possible solutions for implementation of IDF in WW2OL. Enjoy!

Section II: Specifications & Fundamentals

Official Name: 10.5cm Sturmhaubitze 42 (Sd Kfs 142/2)
Abbreviation: StuH42
Type: Assault howitzer
Weight (tons): 24
Length (meters): 6.14
Width (meters: 2.95
Height (meters): 2.16
Future Option: (1) 7.92mm MG34 (like the Stug3G – MG34)
Traverse: 10^ left and right (see graphic below)

Figure 1: StuH42 Field of Traverse is 20 degrees

Armament: 10.5cm howitzer (StuH42 L/28)
Muzzle Velocity: AP - 470 meters/second and HEAT – 495 meters/second
Elevation: -6^ to +20^
Ammunition Loadout: 36 rounds (26 HE, 4 AP, 4 HEAT, 2 SMK)
AP shell at 14.01kg = 72mm penetration at 90^, 50mm at 45^, 35mm at 30^
HEAT shell at 12.31kg = 71mm penetration (all ranges)

Did you know? When at full throttle and moving at maximum speed, the StuH42 can cover 1km of flat road in 90 seconds.

Fundamentals to "live" by:

Does it feel like your shots seems to be astray more than usual?

Go to driver's position and pull back / hold your joystick; continue to hold the joystick while switching to the gunner position. For whatever reason, this action seems to keep the platform from drifting ever so slightly when firing. The individual rounds will still have dispersion but this one step help lower the tendency of wild rounds when firing on target.

Exact kill shots are lucky shots on the StuH42.

This is an area weapon, a howitzer, so if you happen to hit where you aimed on a Sherman 76 frontally from 1,000 meters to strike the gunner side of the turret for an instant-kill, count your blessings. That is a rare event and pure luck.

After ranging the target - TRUST your range table.

Thousands of rounds have been fired to ensure its accuracy. While you have to make small corrections, of course, but the table removes the guess-work and allows YOU greater success.

Make dispersion work for you – not against you.

The hard thing to do, in the beginning, is to learn to trust the general aiming points for each target platform and let the dispersion of the round work for YOU. Large 10.5cm rounds with plunging fire will smash through hull armor, turret rings, and deck armor with explosive results.

The aiming points are to be applied at ALL ranges.

Whether near range (under 500m), to intermediate range (1km) to extreme range (up to 2.4km) just because a target is close to you, **do not instinctively aim for the turret** – you will most likely fail. Stick to your aiming points, kill the tank and live to fight on.

A limited engagement . . .

The StuH42 does have anti-armor capability but recognize you likely have only sufficient ammo to engage a SINGLE enemy tank. With only four rounds each of AP and HEAT, if you survive a tank engagement seek immediate resupply if possible.

The Matilda & Churchill Rule.

The StuH42 simply cannot penetrate the hull, flank or turret of the Matilda II or Churchill-series tanks. It is beyond the reach of the StuH42 to kill them. Immobilizing the tank is your only card to play and your abundant High-Explosive rounds can do the trick if you hit the track idlers or a 90^ shot onto the treads.

Remember - you are fighting in an infantry support vehicle that has the capability of killing enemy armor WHEN you fight WITHIN the capabilities of the platform.

Section III: Cover & Concealment

The StuH42 platform is squatty and has a low profile. Use it to your advantage behind berms and bushes. Due to the arc of fire from the 10.5cm howitzer, firing behind a berm can be extremely effective. You may even be able to use clearings in forests as concealment if you have some line of sight (LOS) to the target. Of course, when/if STOs are implemented LOS will not be necessary.

Periscope View – 800m target

Gunner View – 800m target

Target View – 800m

Section IV: Tactics

Scouting

By using the excellent commander periscope you can easily scout for enemy units and provide accurate contact reports for others units to succeed and not to mention the proper range to the targets due to the range finder. Of particular importance is the screening and elimination of enemy infantry as they move through your zone of control.

Ambush

One of the keys to ambushing in WW2OL is patience. It is very easy to want to move from an established position when no enemy contacts show up in your zone and others are having fun. However, your platform is limited with no co-ax or surface mounted MG for protection so a) being patient, b) well-camouflaged, c) no unnecessary engine start-ups/noise discipline, d) engaging only meaningful targets that you can confidently kill within your traverse of fire are ALL components of success. You may not get kills as you develop this skill of patience in the twitchy-world of Player-versus-Player but it does produce results. More so, if you are working with a group of like-minded players plus using voice-communications your chances of success skyrocket. These are force multipliers that work decidedly in your favor.

Hide

Be creative, try different things to find what works. Watch what other tankers and StuG drivers do. Ask others for their critique of your position – is a part of your StuH42 sticking out from a bush, is it readily visible even though you think you are concealed? Ask questions when you can so you can get better.

Section V: Best Uses

Infantry support

Whether shelling a critical terrain feature, depot, spawn point, or army base – the 10.5cm High-Explosive is the most effective anti-personnel round the Axis have at their disposal. The StuG IIIB 75mm short-barrel is a distant second. Ideally when you fire you want to kill the infantry, wound/stun them, even confuse them to the point of running into other killing lanes of fire. Remember, there is a gamer on the other end of your connection and if they are infantry, they will either move or keep their head down which allows your friendly infantry to move up and storm the objective.

Remember, aiming "short" of a soft target to include trucks ensures that the high-explosive 'cone' of shrapnel passes to and through your target. HE rounds have been modeled more accurate and with the recent patches their effectiveness has DRAMATICALLY increased. Use it to your advantage!

Shelling concentrated enemy equipment

The StuH42 High-Explosive shell can be very effective to deter anti-aircraft guns or anti-tank guns; especially at extreme ranges as their own lethality is reduced to the point of ineffectiveness. If they are moving to get away from your fire they are very vulnerable to air and ground attack. Effective coordination with other units on the defense or attack will reap rewards as when they are moving – they ain't shooting. You can even engage anti-aircraft guns within the AB walls from ranges over 2km and they have no LOS on your position but you WILL get the kill.

Direct Fire Support

Due to the long reload time with the StuH42, I recommend when possible to operate in pairs (which constitutes as a StuH42 platoon in the Wehrmacht ORBAT) which increases the combined firepower plus if fired alternatively, every few seconds there is a round hitting the target and provides a longer bombardment time on the objective. If possible, have a plan of what you want to accomplish before beginning bombardment instead of just rolling up and firing indiscriminately. Targeted, focused fire is much more effective and helps with the assault to the objective.

Covering the assault with HE & Smoke

The farther away from the objective the greater coverage with the StuH42 20 degree traverse. This becomes readily evident when assisting with firing High-Explosive and providing cover with a smoke barrage. This is where working with a dedicated group with the correct composition of equipment is CRITICAL for specific missions on the assault or recapture. The StuH42 has only TWO smoke rounds so a platoon of StuH42s has a whopping FOUR smoke rounds but each of these armored units has smoke in their inventory so they should also be included in your battle group: Pz IVD (7), StuG IIIB (7), and Pzr IIIN (4) smoke rounds.

If you are going to be throwing some serious smoke to cover a large assault on a bunker, etc – you need to make sure you have ammo caches or trucks immediately available to restock upon firing your inventory.

FYI – each smoke round lasts approximately 50 seconds and is fully deployed within 7 seconds once it strikes the ground and at 45 seconds it begins to rapidly dissipate.

Section VI: The Logistical Tail

Reload & Resupply Times

The StuH42 takes approximately 10 seconds to reload once fired. This is why using your range finder through the commander is key. Deploy your commander and as soon as you start determining range, button up your commander. Once you have ranged your target, load the appropriate ammunition, aim, and fire. If you know what type of round you will be using you can begin loading that round while the Commander is still determining range.

When you have exhausted each type of round that the StuH42 carries, it will automatically load a High-Explosive round. What this means if you are in combat and exhaust your AP load out, you need to cycle your ammo until HEAT is showing then it will load HEAT; otherwise you will fire the default round of HE then you have to select HEAT and start another reload sequence. All of this takes TIME and the enemy is very likely firing at YOU!!

Ammo Support

As mentioned earlier, your StuH42 carries the following shell load-out:

High-Explosive	26
Armor Piercing	4
High-Explosive Anti-Tank (HEAT)	4
Smoke	2
TOTAL	36

A second account or friendly truck driver can resupply or drop an ammo cache near your position. A DLC NCO can also place an ammo cache to keep you in the field fighting and killing. Of course, mobile spawns provide ammo resupply but they are actively hunted by the enemy so you must assume you are likely under observation when resupplying which eliminates your element of surprise when you drive back to your hunting place.

Resupply Timer

The resupply timer is approximately 30 seconds with a new round being resupplied every 2 seconds after the initial 30 seconds. If you fire during the resupply, the timer is reset and you must wait another seconds before resupply begins again.

Section VII: Ammunition – not all rounds are created equal

High-Explosive Rounds

The StuH42 HE round is the HIGHEST arcing round and has NO anti-tank penetration capabilities thru the entire spectrum of Allied armor down to the Vickers tankettes. The only thing the HE round can do is to track an armored vehicle with a direct hit on the sprocket but this is not an easy task given the howitzer's characteristics.

Armor-Piercing Rounds

The AP round does have an arc to it as well but not as pronounced as the HE round. Your most effective anti-tank round is the AP round. It consistently penetrates across most platforms; particularly at the flank, generally on the rear, and is platform dependent when attacking frontally.

High-Explosive Anti-Tank (HEAT) Rounds

The HEAT round has a relatively flat trajectory, almost like a tank round and is most often used on frontal engagements and sometimes on rear shots. It is the most consistent KILLING round from the FRONT against heavily armored turrets / gun mantlets. The HEAT round is most successful when striking surfaces at 90 degrees but given that the gun itself is a howitzer and not particularly accurate to hit a 90 degree surface which can lead to some frustrating results when you hit the target. This is why in most cases it is encouraged to use the AP rounds when possible.

Penetration Abnormalities given the ammunition

As you read through the information you will discover odd circumstances that on the face make no sense but reason needs to prevail, so trust the collected data.

The StuH42 rounds do struggle to penetrate and kill several platforms from specific attack angles such as killing the A-13 from the rear whether using AP or HEAT rounds. Different armor angles and various nooks and crannies whether it be the rear of the A-13 or angled rear armor from the deck of the M-10 – such disparities have a significant impact on the penetration capability of the StuH42s 10.5cm howitzer rounds.

The kill-data information was gathered at ranges from 500m to 1,000 meters and the intermittent ranges in-between to ensure reliable data at a consistent range. A fair portion of the kills do NOT visually demonstrate a kill (no exploding turret or burning tank); particularly for turret kills. If the turret ceases to move to acquire new targets, the gunner is dead but the commander, driver, and hull gunner could be alive.

When the StuH42 rounds strike on target, the tank is either - immediately burning, exploding or has a non-traversing dead turret. White or brown smoke simply means a damaged or burned out engine with a FUNCTIONAL tank turret.

Section VIII: Range Tables

The StuH42 range tables on continued on the next two pages with direct Links to WW2OL Wikipedia for the StuH42 single page pdf located here - StuH42 Ranging Table - 1 page PDF

StuH42 Ranging Table

Normal Gun Sight

Ranges rounded to the nearest 10s

Range	HE	AP	HEAT	SMOKE
250m	250	400	400	250
500m	500	700	480	500
550m	550	770	530	550
600m	600	840	580	600
650m	650	910	620	650
700m	700	980	670	700
750m	750	1050	720	750
800m	800	1120	770	800
850m	850	1190	820	850
900m	900	1260	860	900
950m	950	1330	910	950
1000m	1000	1400	960	1000
1050m	1050	1470	1010	1050
1100m	1100	1540	1060	1100
1150m	1150	1610	1110	1150
1200m	1200	1680	1150	1200
1250m	1250	1750	1200	1250
1300m	1300	1820	1250	1300
1350m	1350	--	1300	1350
1400m	1400	--	1340	1400
1450m	1450	--	1390	1450
1500m	1500	--	1440	1500

Normal Gun Sight
Targeting & Munitions Notes:

- Aiming reticle needs to be place just to the LEFT of the target

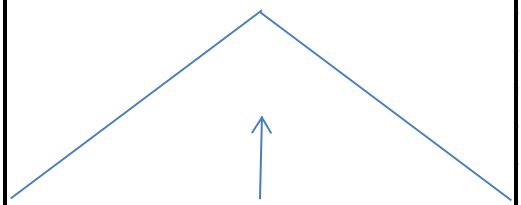
- The calculated ranges in the above table for AP and HEAT munitions are based upon the below formula(s) to allow you to hit your target.

    - AP Range X 140% = Actual range needed for muntition to hit target
    - HEAT Range X 96% = Actual range needed for munition to hit target
    - SMOKE - billows left to right. Max coverage in 7 secs, maintains max coverage for 38 secs, 100% dissipation at 50 secs

Tentpole Sighting Method

Range	HE	AP	HEAT	SMOKE
1200m	450	1020	350	450
1250m	500	1060	400	500
1300m	570	1100	450	570
1350m	620	1140	500	620
1400m	660	1180	550	660
1450m	710	1230	620	710
1500m	760	1270	680	760
1550m	800	1300	760	800
1600m	860	1350	800	860
1650m	920	1400	860	920
1700m	990	1440	890	990
1750m	1060	1480	950	1060
1800m	1120	1520	1000	1120
1850m	1180	1570	1060	1180
1900m	1240	1600	1120	1240
1950m	1280	1650	1170	1280
2000m	1330	1700	1220	1330
2050m	1390	1730	1290	1390
2100m	1450	1780	1340	1450
2150m	1490	1800	1380	1490
2200m	1550	--	1430	1550
2250m	1600	--	1480	1600
2300m	1650	--	1530	1650
2350m	1700	--	1590	1700
2400m	1760	--	1640	1760

Tentpole Sighting Method



When using the TOP of the "tentpole" as an aiming point, adjust your range based upon the munition being fired. See the above "Tentpole Sighting" table" for range information.

***NOTE* If you observe that elevation is impacting your range to target - here's how you can adjust.**

- Range your target using the Range Finder
- Consult appropriate range table using munition type (EX: Using "Normal Gun Sight" table - 1000M range to TARGET firing AP, set range to 1400M)
- Judge (rough guess) the expected elevation change from your gun position (EX: TARGET is 100M higher than your gun position)
- Calculate the Vertical Interval (EX: 100M divided by 2 = Vertical Interval of 50M)
- Adjust range (EX: 1000M range to TARGET firing AP, set range to 1400M plus 50M = 1450M to target)
    - ❖ If Altitude of Target is **higher** than your gun position **increase** range (firing uphill means rounds travel less distance)
    - ❖ If Altitude of Target is **lower** than your gun position **decrease** range (plunging rounds travel further distance downhill)

How to calculate the Vertical Interval (VI):

Altitude difference (in meters) between YOUR position and the TARGET then divide by 2

Section IX: Aiming Points & Gunsight / Commander Views

At ranges UP TO 1820 meters, which is the maximum current range setting for the StuH42 gun sight, you use the standard aiming point (see below)

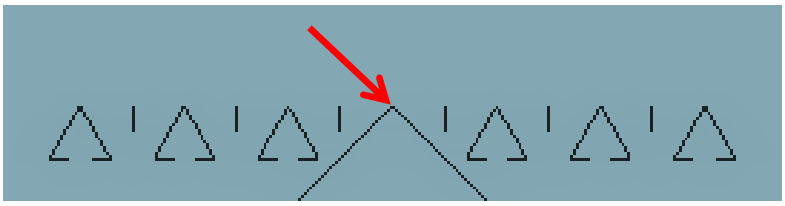


Figure 1: Standard Aiming Point

At ranges OVER 1820 meters you use the 'tentpole' aiming point (see below)

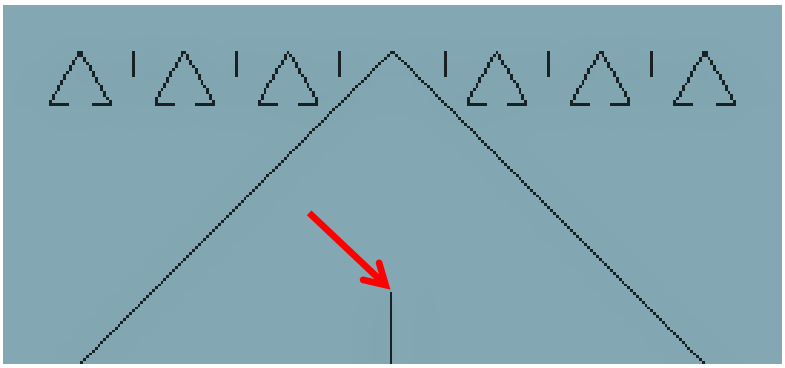


Figure 2: Tentpole Aiming Point

This allows you to engage ALL targets like trucks, tanks, anti-tank, and anti-aircraft guns with an extended range out to 2,400 meters (2.4km) per the StuH42 Ranging Table (see Section VIII). Recognize that the rounds fired from the StuH42 are NOT presently server-tracked and as such, enemy infantry will NOT render to be killed at ranges OVER 700m. Until the rounds become server tracked objects (STO) do not expect to receive kill or damage credit on enemy infantry at long ranges.

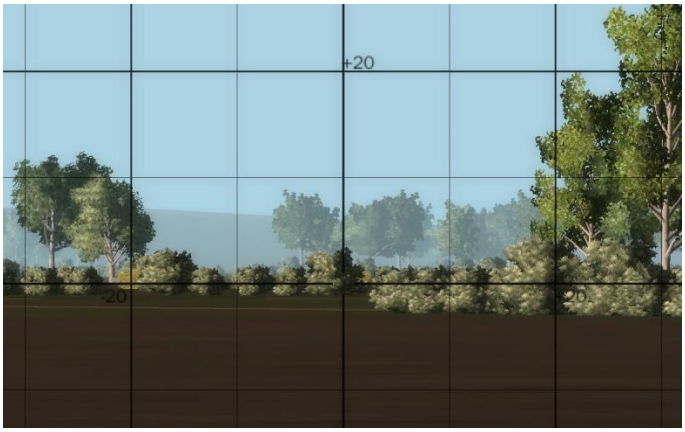


Figure 3: Commander Binocular View

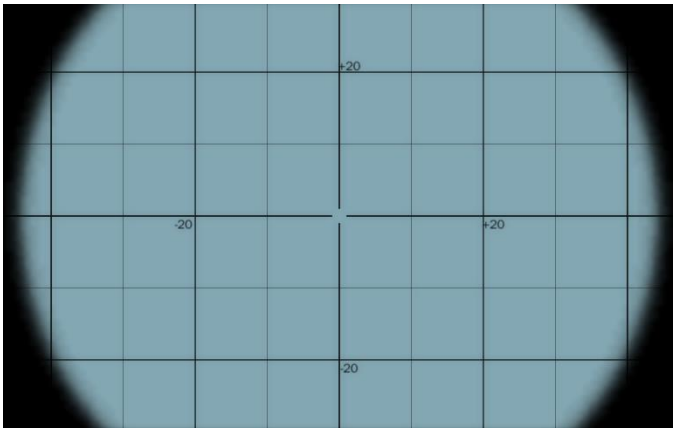


Figure 4: Commander Binocular View

Section X: The StuH42 Target Engagement Table

Detailed below are the most effective range and ammunition to use to effectively KILL the listed tank, tank destroyer, or armored car. Remember the "Survival Rules" and review the "Legend / Notes" to achieve the best possible results when using the table.

My recommendation when moving to an objective is to do the following:

- Deploy the gunner sight (this is needed to get to the gunsight view)
- Load AP
- Set range to 700m (equals 500m when firing AP or 670m when firing HEAT)

StuH42 Target Engagement Table

VEHICLE	TESTED AT	FLANK		TESTED AT	FRONT		TESTED AT	REAR	
Sherman 75	850m	1st - AP	2nd - HEAT	850m	HEAT ONLY	2nd - NR	850m	1st - AP	2nd - HEAT
Sherman 76	850m	1st - AP	2nd - HEAT	850m	HEAT ONLY	2nd - NR	850m	1st - AP	2nd - HEAT
Firefly	850m	1st - AP	2nd - HEAT	850m	HEAT ONLY	2nd - NR	850m	1st - AP	2nd - HEAT
M10 / Wolverine	1000m	1st - AP	2nd - HEAT	450m	HEAT ONLY - lower %		800m	1st - HEAT	2nd - AP
Achilles TD	600m	1st - AP	2nd - HEAT	500m	HEAT ONLY - lower %		650m	HEAT ONLY - lower %	
Crusader II / II CS	1000m	1st - AP	2nd - HEAT	950m / 700m	1st - HEAT	2nd - AP	1000M	HEAT ONLY	NR
Crusader III / III CS	***** same as above *****			***** same as above *****			***** same as above *****		
A-13	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT	750m	AP - low %	HEAT - N/A
Stuart	1000m	1st - AP	2nd - HEAT	750m	1st - AP	2nd - HEAT	750m	1st - AP	2nd - HEAT
Daimler AC	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT
Vickers Vib	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT
Char b1 Bis	1000m	1st - AP	2nd - HEAT	1000m	HEAT ONLY		1000m	1st - AP	2nd - HEAT
Somou S-35	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT	1000m	HEAT ONLY - lower %	
Hotchkiss H-39	1000m	1st - AP	2nd - HEAT	1000m	HEAT ONLY	AP - lower %	1000m	1st - AP	2nd - HEAT
Renault R-35	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT
Panhard 178 AC	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT	1000m	1st - AP	2nd - HEAT

SURVIVAL RULES:

DO NOT ENGAGE	Matilda II	Cannot kill - disable tracks only
DO NOT ENGAGE	Churchill	Cannot kill - disable tracks only

LEGEND / NOTES

* ALWAYS - ALWAYS - ALWAYS - AIM for CENTER MASS whether TGT is FLANK, CENTER, or REAR. This lets DISPERSION work for YOU!
* Ammo listed first has yielded the most CONSISTENT results during test firing
* NR (not recommended) other ammo used produced no, neglible, or HIGHLY inconsistent results at the tested range
* X ONLY - HIGHLY RECOMMENDED to use this ammo as other ammo has yielded LITTLE to NO success
* X lower % - difficult shot for StuH42 due to dispersion, angled armor which negate X shell effects (anticipate INCONSISTENT results)
* SPECIFIC AIMING will cause you to MISS more frequently than HIT your TGT. This is a HOWITZER - NOT a rifled gun.

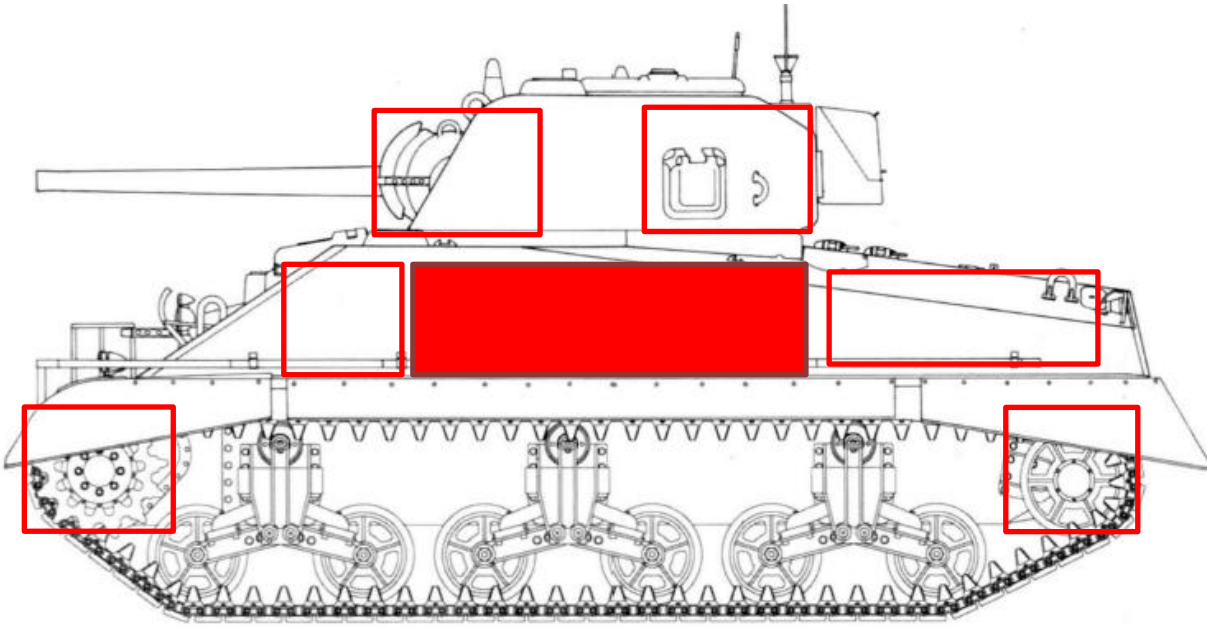
Section XI: How to Kill

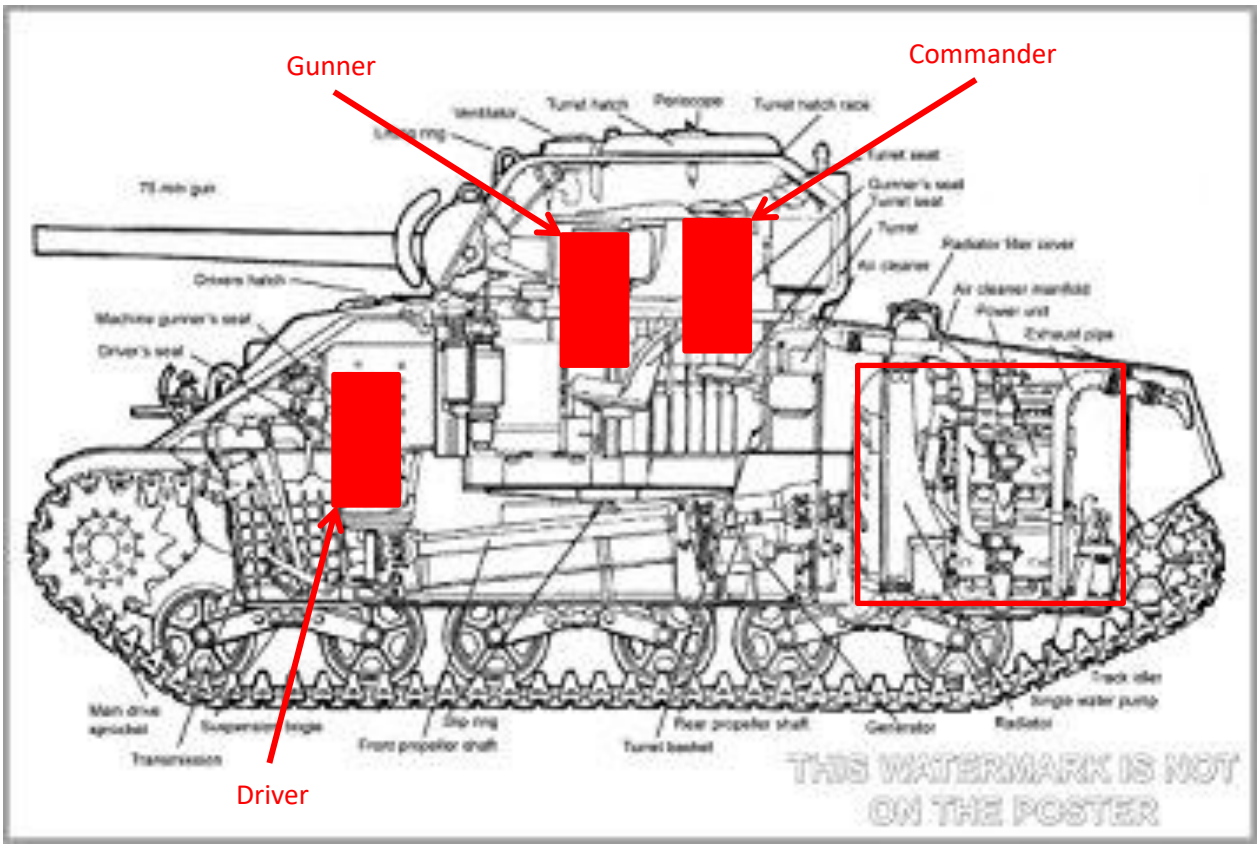
How to Kill: Aiming Point Legend

	HIGH percentage of success. Aim center mass on the primary aiming point for StuH42
	Difficult or reduced percentage of success. If you are aiming center mass on the primary aiming point, either the first or subsequent rounds will strike the secondary aiming points due to dispersion.
	Do NOT aim at this area due to low percentage results or armor impenetrable at this angle.
NO!!	See above – do NOT aim at the area labeled with the  .

Section XI(a): How to Kill - Sherman 75 / 76 & Firefly

The following pages and screenshots are for the Sherman 75/76 & Firefly!

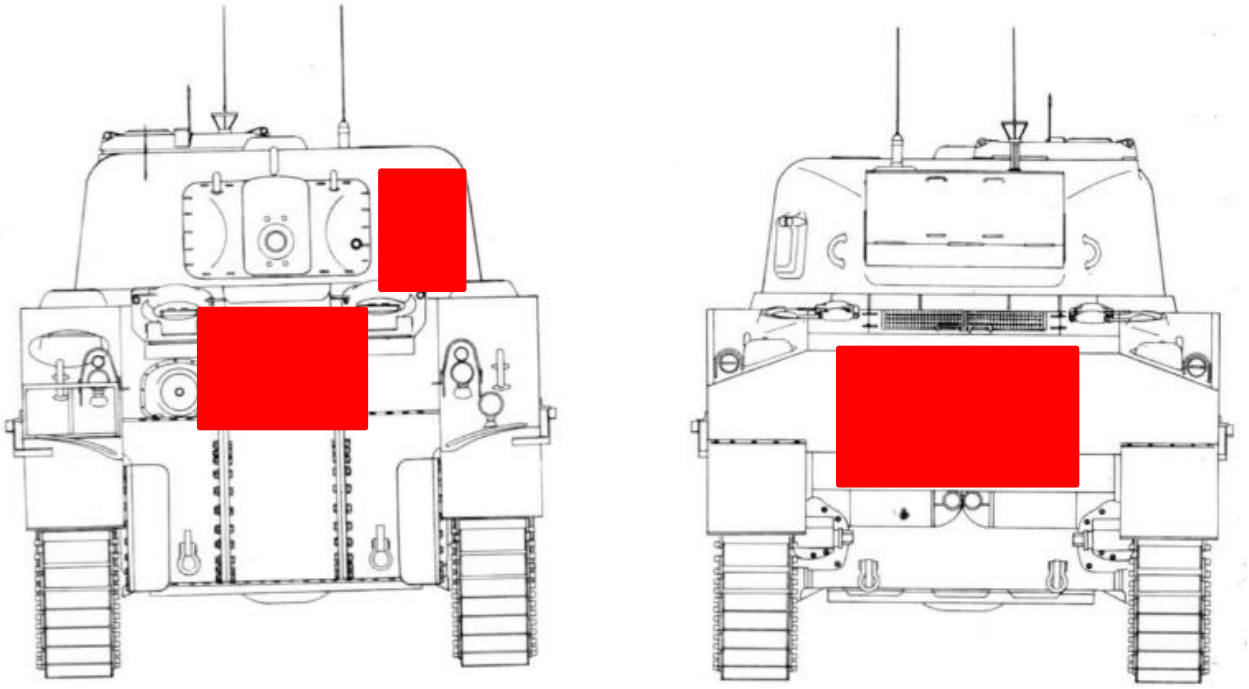




<u>FLANK AIM POINT:</u> VERTICAL PLATE
1ST CHOICE – AP
2ND CHOICE – HEAT

MAXIMUM RANGE: 850 METERS

Figure 1: 850m flank shot - Sherman 75



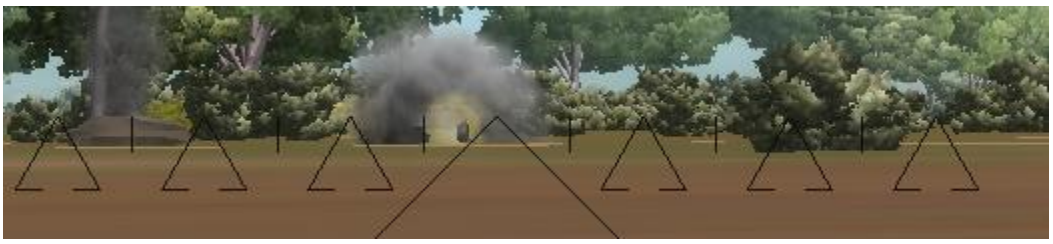
FRONT AIM POINT: AIM BETWEEN THE HATCHES – **LET ROUND DISPERSION WORK FOR YOU**

HEAT ROUNDS **ONLY**

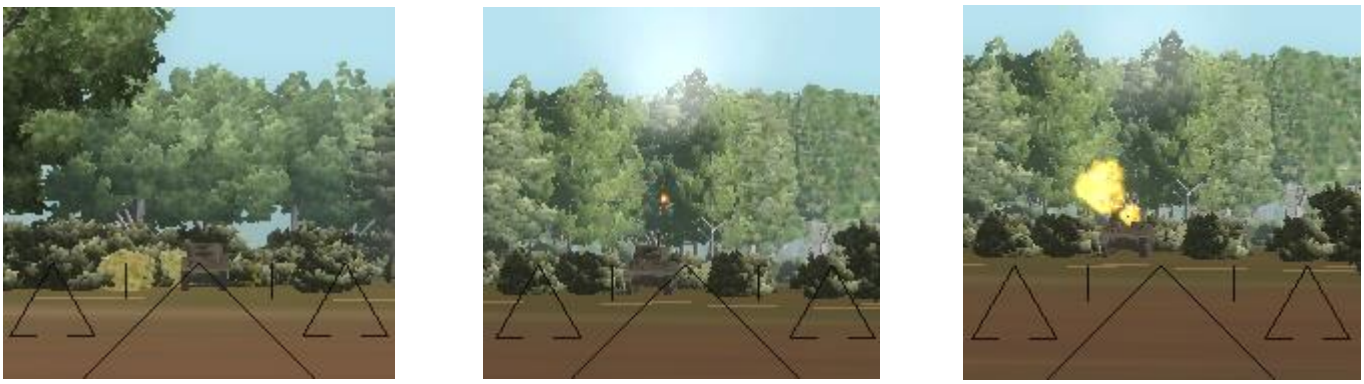
MAXIMUM ENGAGEMENT RANGE: 850 METERS (INTERMITTENT KILL UP TO 1KM)

REAR AIM POINT: VERTICAL REAR PLATE, SKIP THE ANGLE REAR DECK & TURRET

1ST CHOICE – AP
2ND CHOICE – HEAT

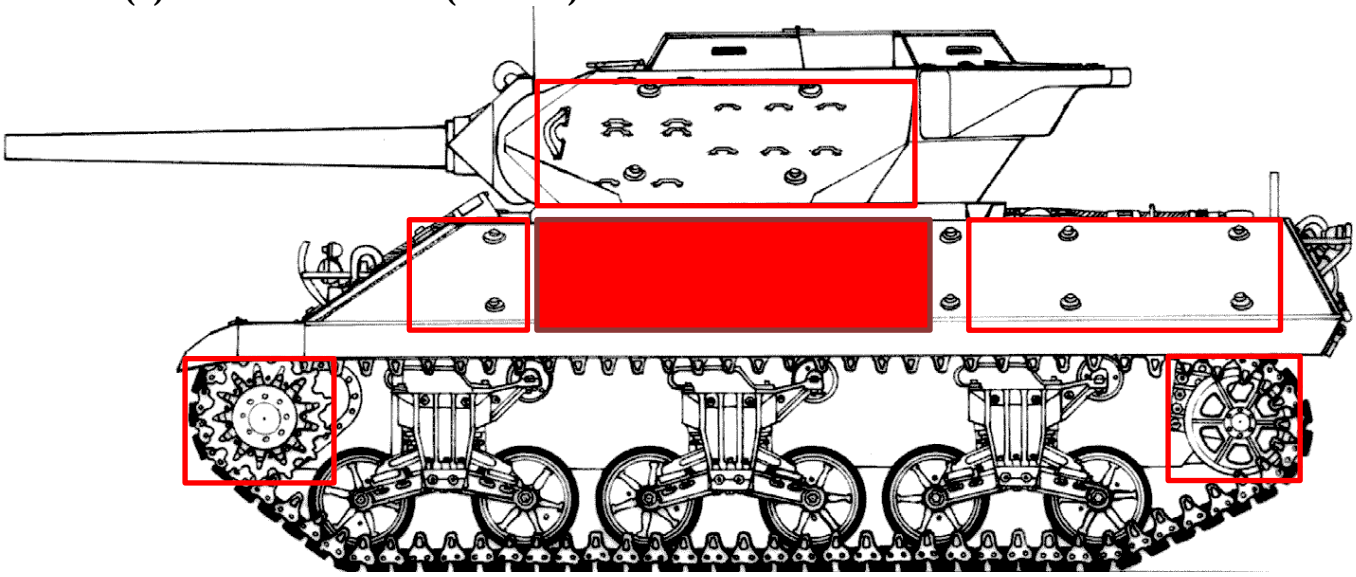


AP - 850m rear shot – Sherman 75



HEAT - 1000m front shot – Sherman 75

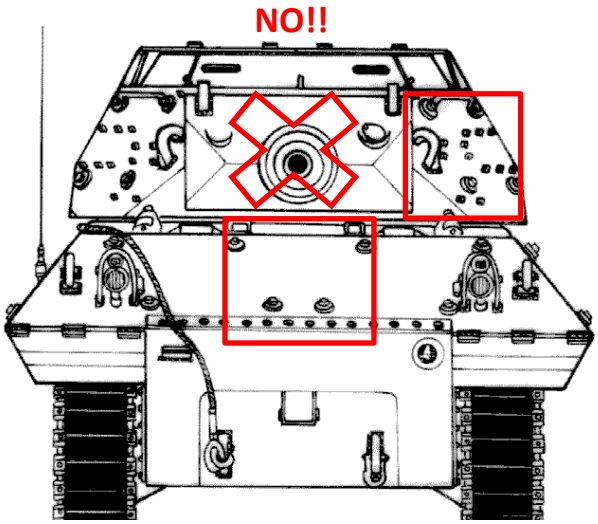
Section XI(b): How to Kill - M10 (3in Gun)

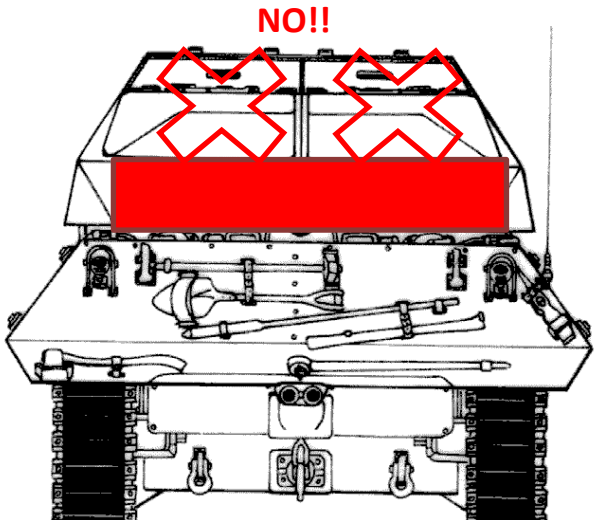


FLANK AIM POINT: ANGLED SIDE PLATE (NOT A TRUE VERTICAL ANGLE)

1ST CHOICE – AP
2ND CHOICE – HEAT

Plunging fire . . . for the win! Trust dispersion.





FRONT AIM POINT: AIM BETWEEN THE BOLT PATTERN ON THE FRONT GLACIAS – **LET ROUND DISPERSION WORK FOR YOU**

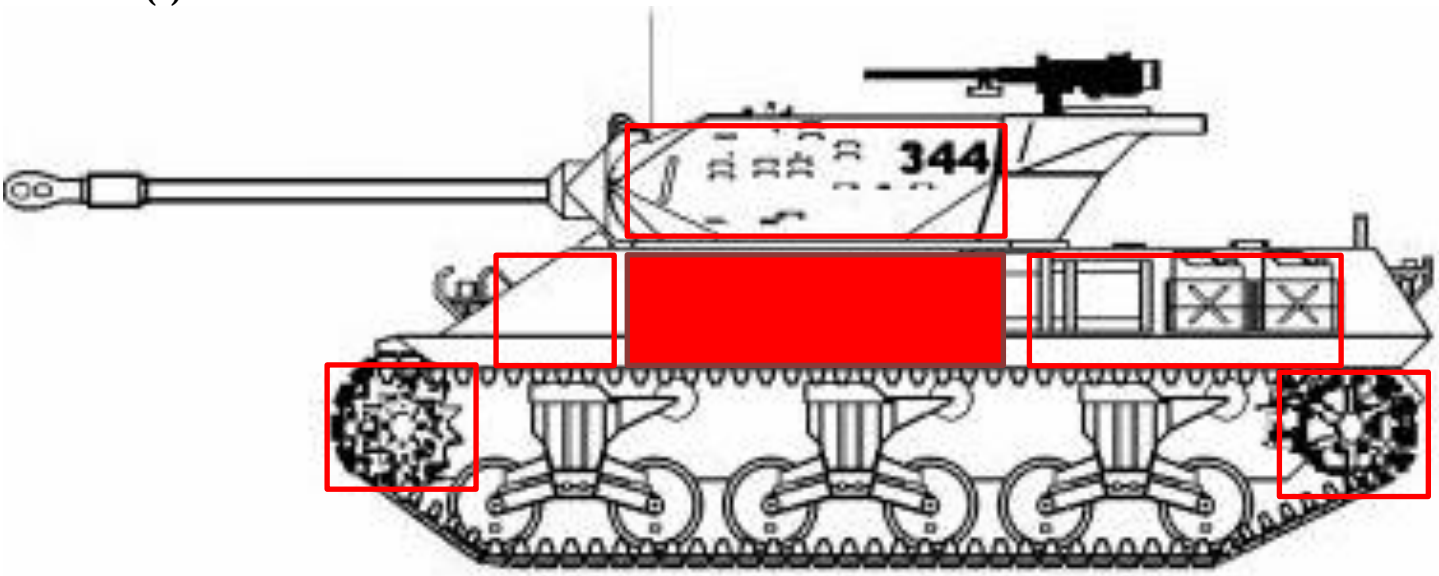
HEAT ROUNDS **ONLY**

MAXIMUM ENGAGEMENT RANGE: 450 METERS (AS ROUNDS WILL LIKELY STRIKE THE THICK M10 GUN MANTLET)

REAR AIM POINT: TOUGH SHOT FOR STUH42 – SMALL WINDOW AT BASE OF TURRET

1ST CHOICE - HEAT ONLY!
2ND CHOICE - AP WORKS OCCASSIONALLY AT 750M WITH HIT TO BASE OF TURRET

Section XI(c): How to Kill - M10 Achilles TD

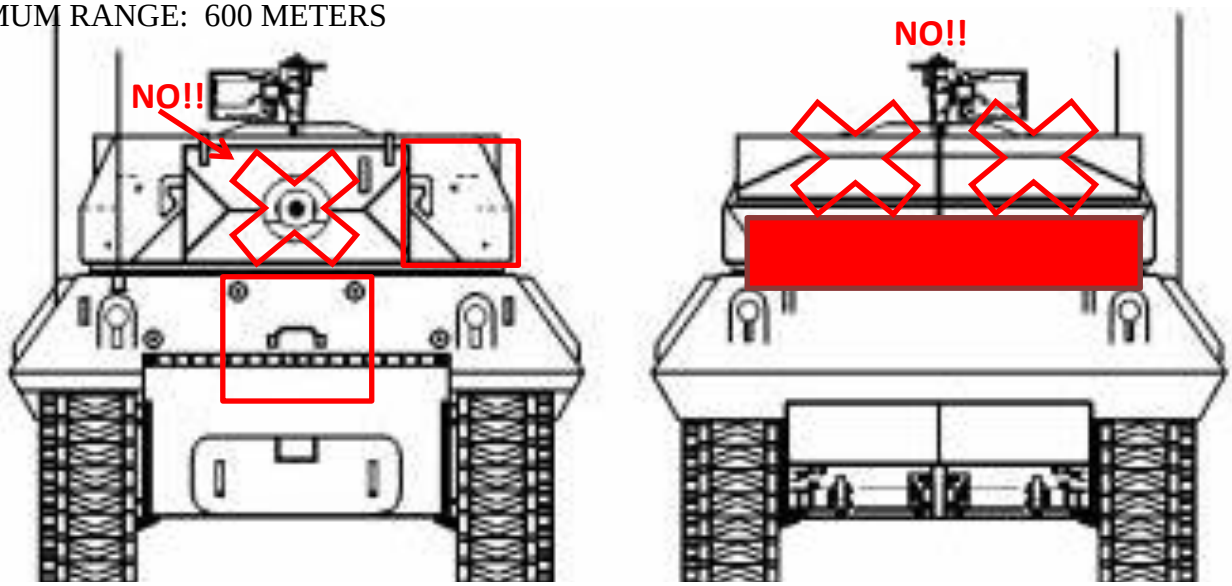


FLANK AIM POINT: ANGLED SIDE PLATE (NOT A TRUE VERTICAL ANGLE)

1ST CHOICE – AP
2ND CHOICE – HEAT

Plunging fire . . . for the win! Trust dispersion.

MAXIMUM RANGE: 600 METERS



FRONT AIM POINT: AIM BETWEEN THE BOLT PATTERN ON THE FRONT GLACIAS – **LET ROUND DISPERSION WORK FOR YOU**

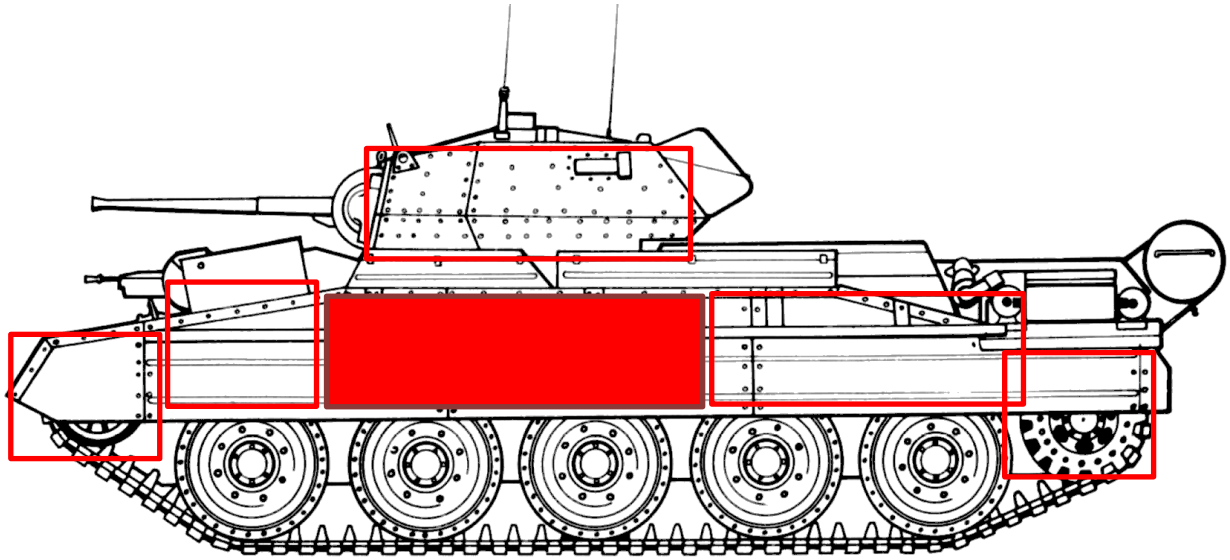
HEAT ROUNDS **ONLY**

MAXIMUM ENGAGEMENT RANGE: 500 METERS (AS ROUNDS WILL LIKELY STRIKE THE THICK M10 GUN MANTLET)

REAR AIM POINT: TOUGH SHOT FOR STUH42 – SMALL WINDOW AT BASE OF TURRET

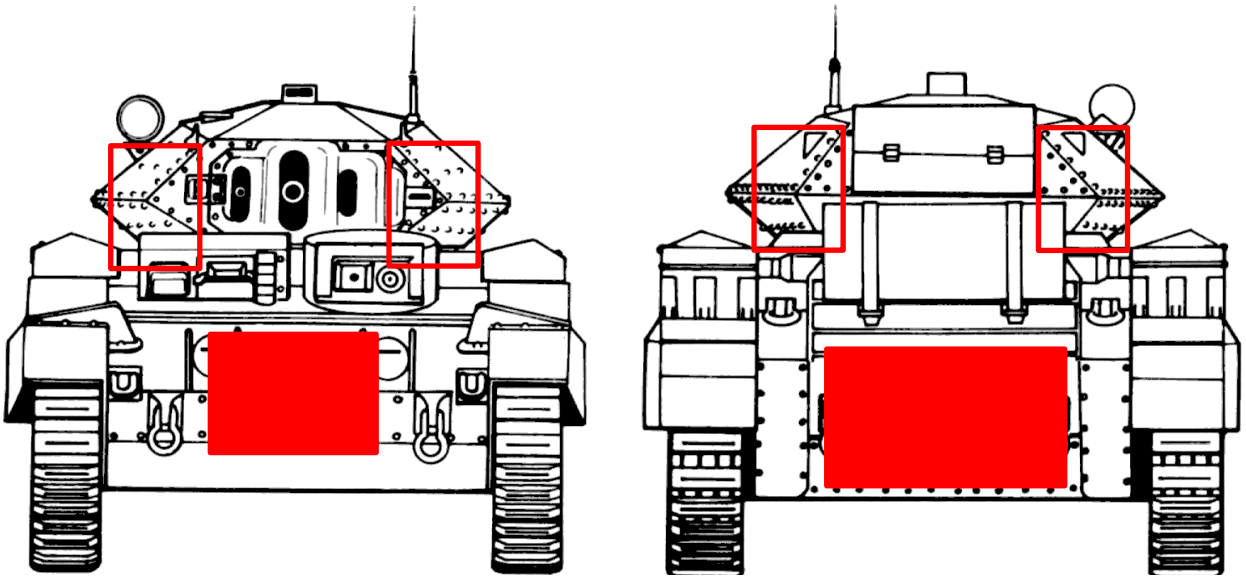
HEAT ROUNDS **ONLY**

Section XI(d): How to Kill - Crusader II/II CS, III/III CS



FLANK AIM POINT: VERTICAL PLATE
1ST CHOICE – AP
2ND CHOICE – HEAT

MAXIMUM RANGE: 1,000 METERS



FRONT AIM POINT: AIM BETWEEN THE BOLT PATTERN ON THE FRONT GLACIAS – **LET ROUND DISPERSION WORK FOR YOU**

1ST CHOICE – HEAT (950 METERS)
2ND CHOICE – AP (700 METERS)

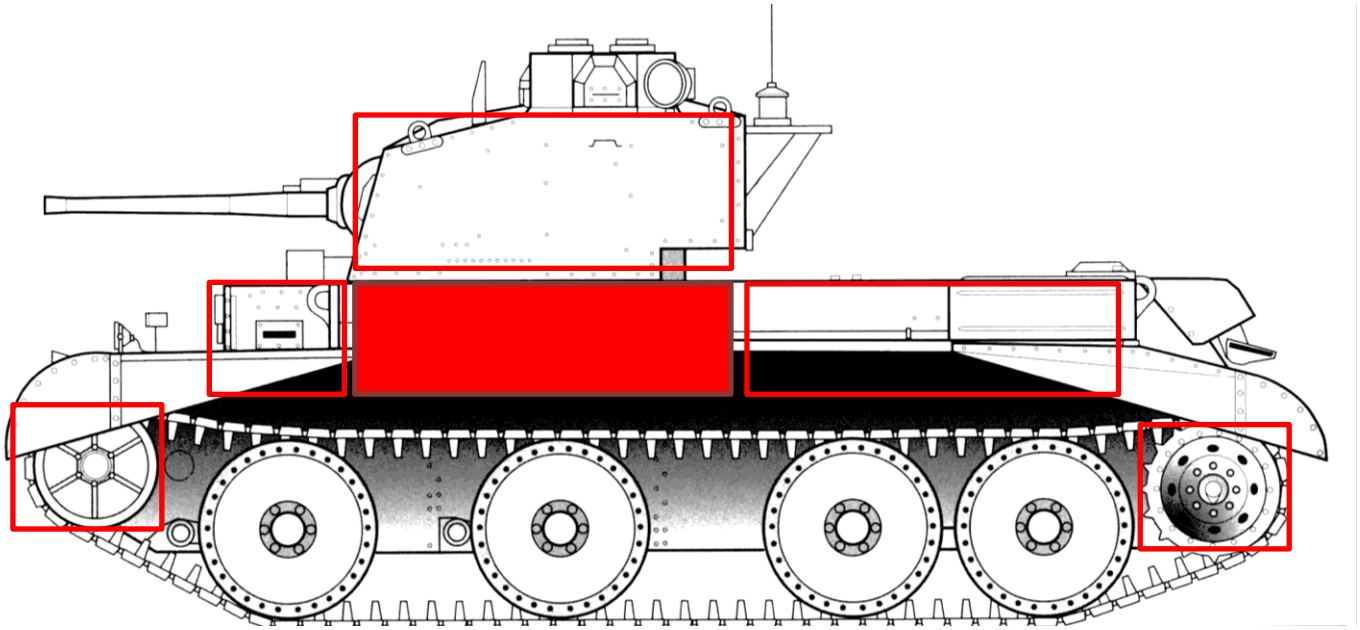
MAXIMUM ENGAGEMENT RANGE: 950 METERS – HEAT **OR** 700 METERS – AP

REAR AIM POINT: TOUGH SHOT FOR STUH42 – SMALL WINDOW AT BASE OF TURRET

HEAT ROUNDS **ONLY** – ANTICIPATE PLUNGING FIRE WITH RESULTS ON TURRET HITS

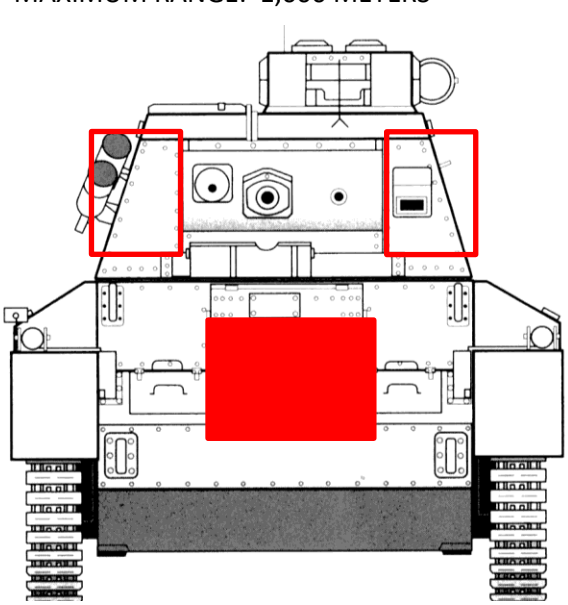
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

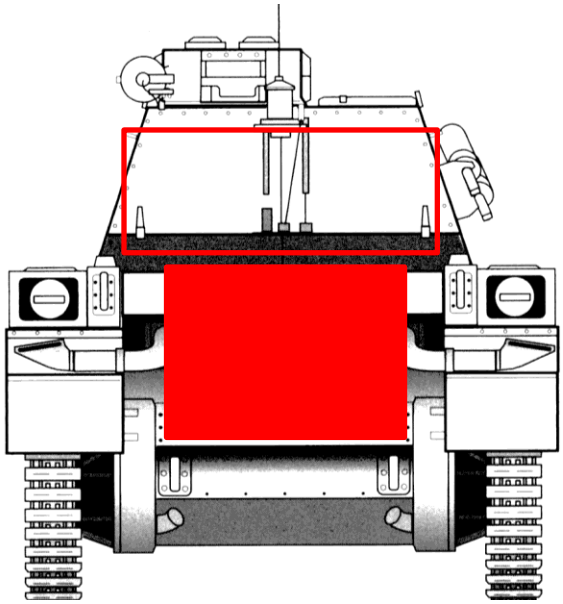
Section XI(e): How to Kill - A13



FLANK AIM POINT: VERTICAL PLATE
1ST CHOICE – AP
2ND CHOICE – HEAT

MAXIMUM RANGE: 1,000 METERS





FRONT AIM POINT: AIM CENTER OF HULL ON THE FRONT HULL & SUPERSTRUCTURE – **ROUND DISPERSION FTW!!**

AP

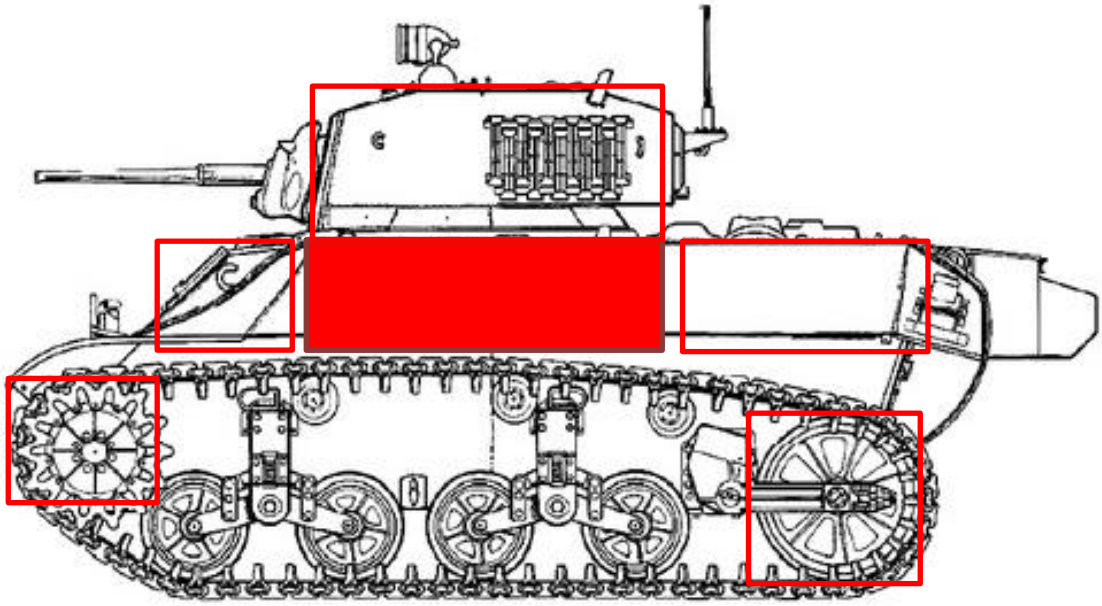
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

REAR AIM POINT: TOUGH SHOT FOR STUH42 - YOU CAN GET THE ENGINE TO SMOKE EASILY BUT A DISPERSED ROUND TO THE REAR OF THE TURRET KILLS THE TANK – MOST OF THE TIME.

AP

MAXIMUM ENGAGEMENT RANGE: 750 METERS

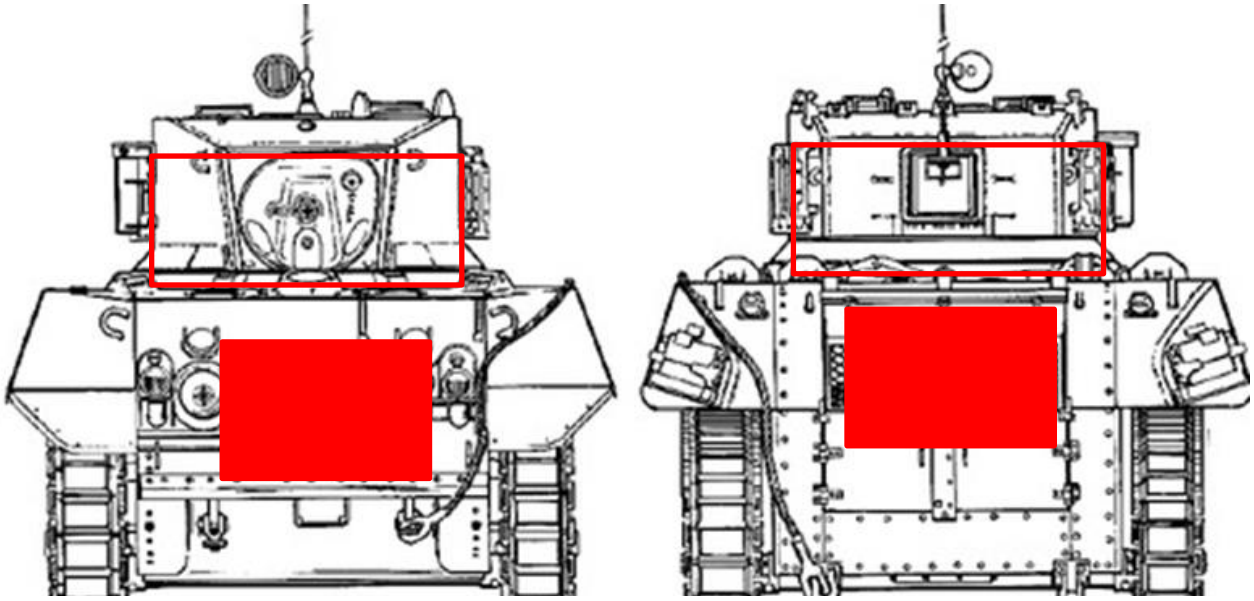
Section XI(f): How to Kill - Stuart V



FLANK AIM POINT: VERTICAL PLATE

AP

MAXIMUM RANGE: 1,000 METERS



FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL – ANGLED FRONT GLACIA WORKS AGAINST STUH42 ROUNDS – **ROUND DISPERSION FTW!!**

AP

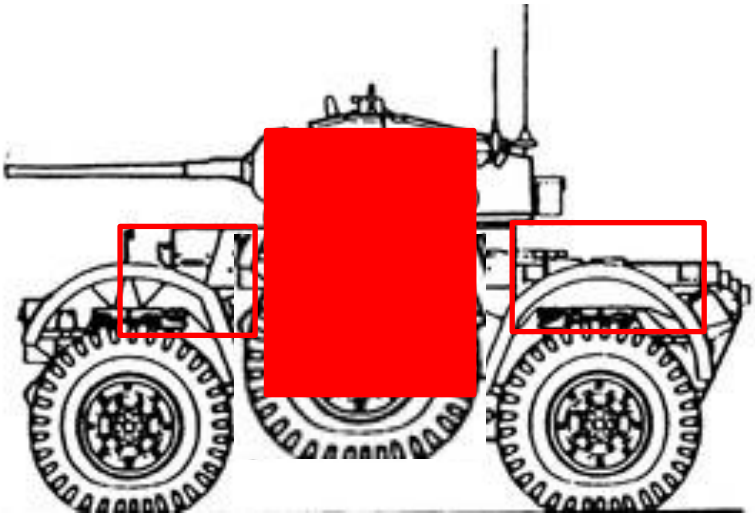
MAXIMUM ENGAGEMENT RANGE: 750 METERS

REAR AIM POINT:

AP

MAXIMUM ENGAGEMENT RANGE: 750M METERS

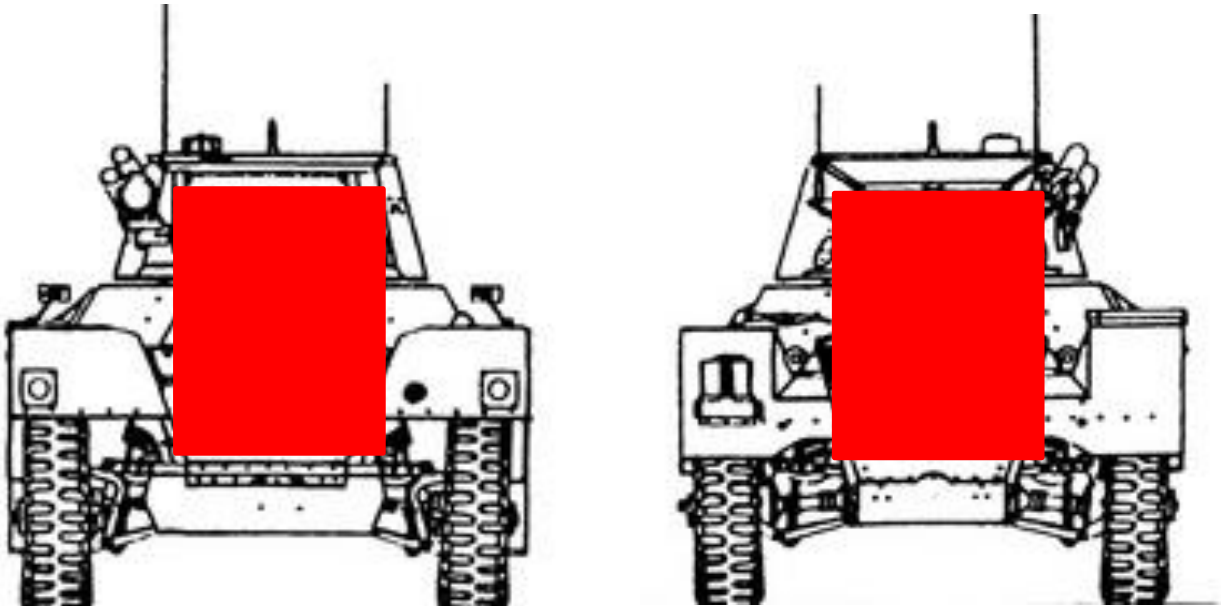
Section XI(g): How to Kill - Daimler Armored Car



FLANK AIM POINT: VERTICAL PLATE

AP

MAXIMUM RANGE: 1,000 METERS



FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL
AP

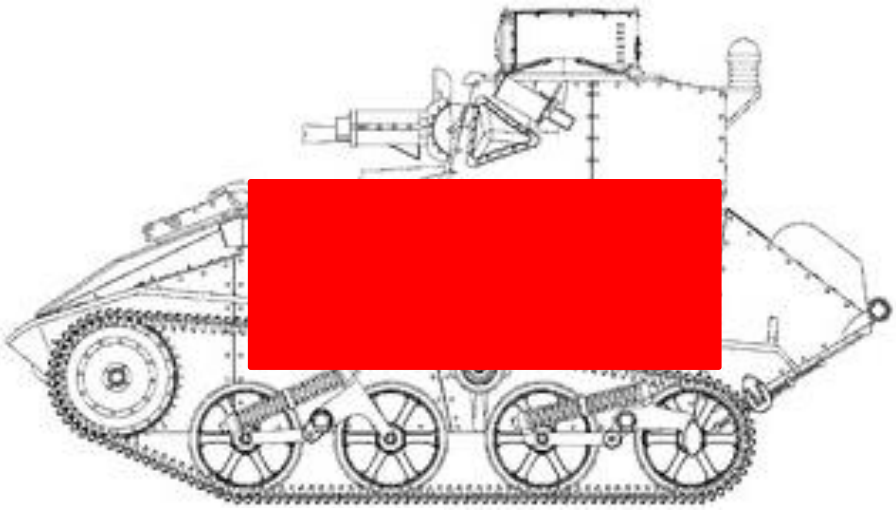
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

REAR AIM POINT:

AP

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

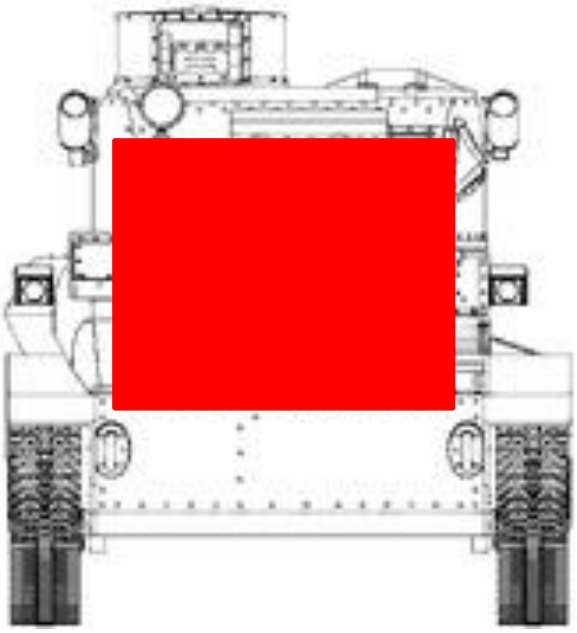
Section XI(h): How to Kill - Vickers VIb

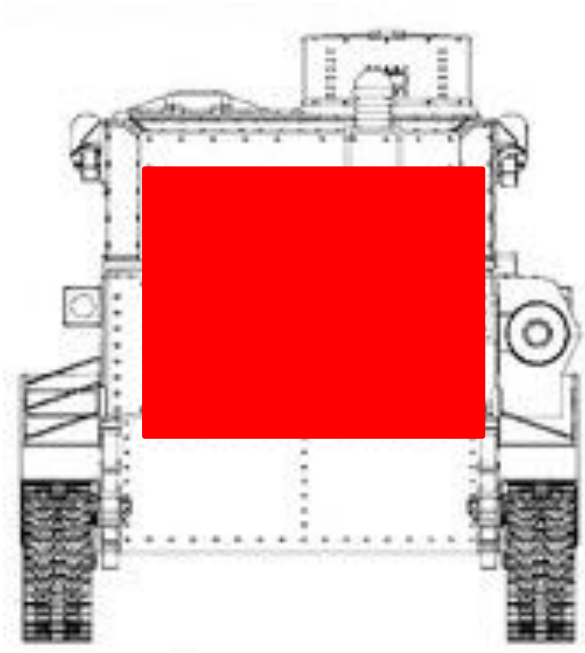


FLANK AIM POINT: VERTICAL PLATE

AP

MAXIMUM RANGE: 1,000 METERS





FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL
AP

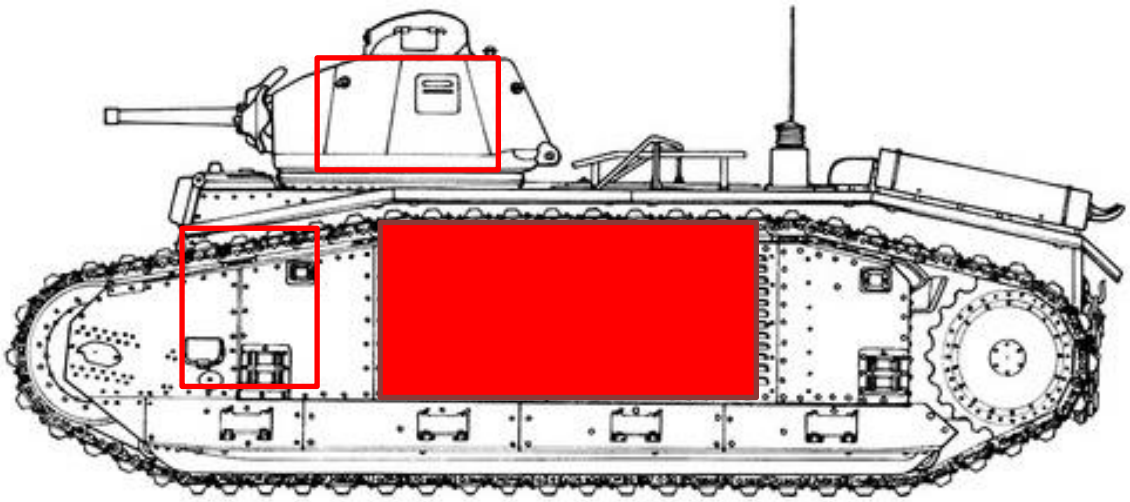
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

REAR AIM POINT:

AP

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

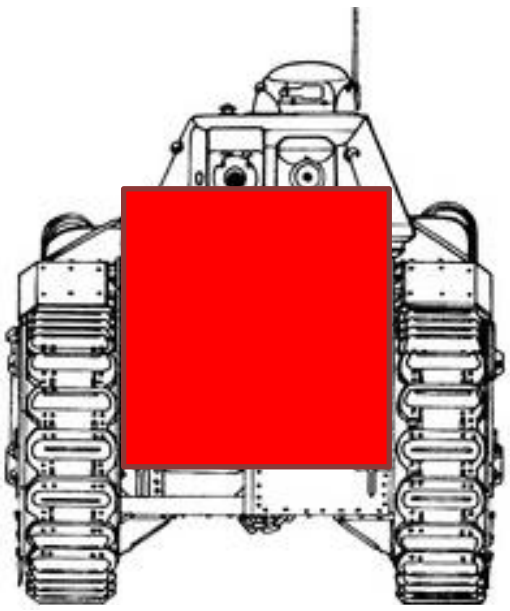
Section XI(i): How to Kill - Char 1b Bis

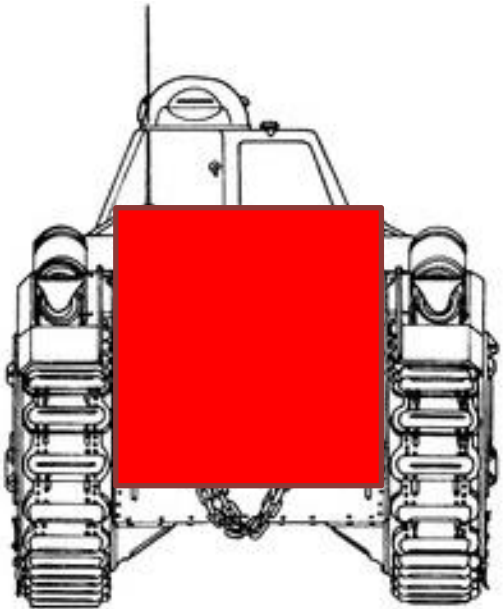


FLANK AIM POINT: VERTICAL PLATE

AP

MAXIMUM RANGE: 1,000 METERS





FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL / HEAT PENETRATES FRONT TURRET, TOO

HEAT

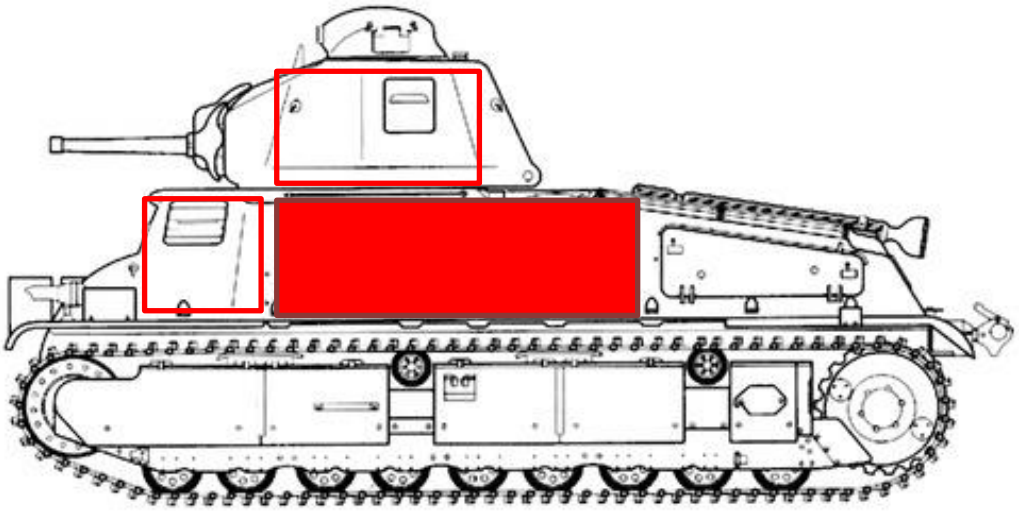
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

REAR AIM POINT: AIM CENTER MASS ON THE REAR HULL / AP CAN PENETRATE REAR TURRET, TOO

AP

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

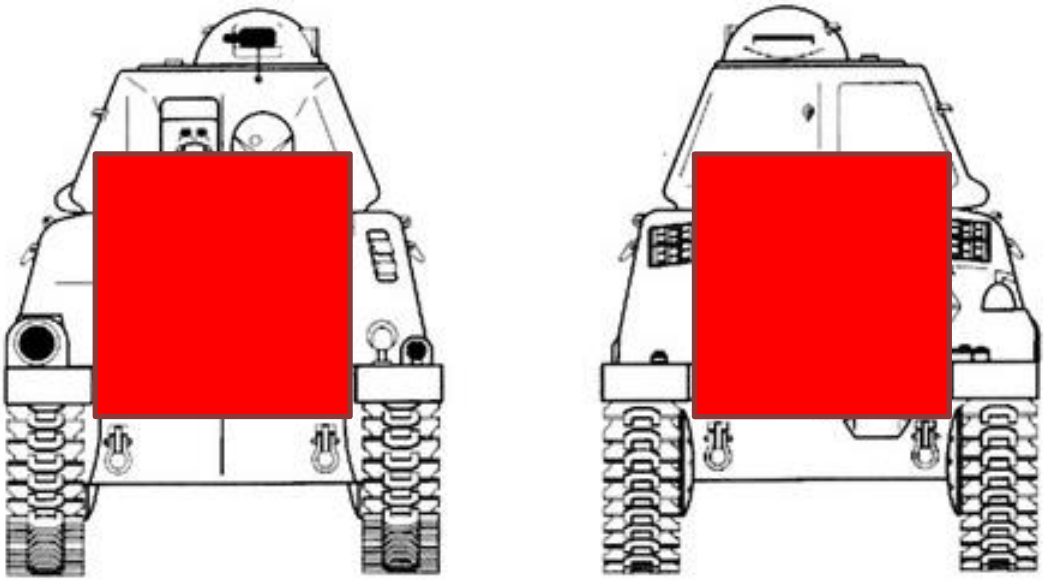
Section XI(j): How to Kill - Somou S35



FLANK AIM POINT: VERTICAL PLATE / LOW % KILL ON CREW WHEN AIMING ENGINE

AP

MAXIMUM RANGE: 1,000 METERS



FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL

AP

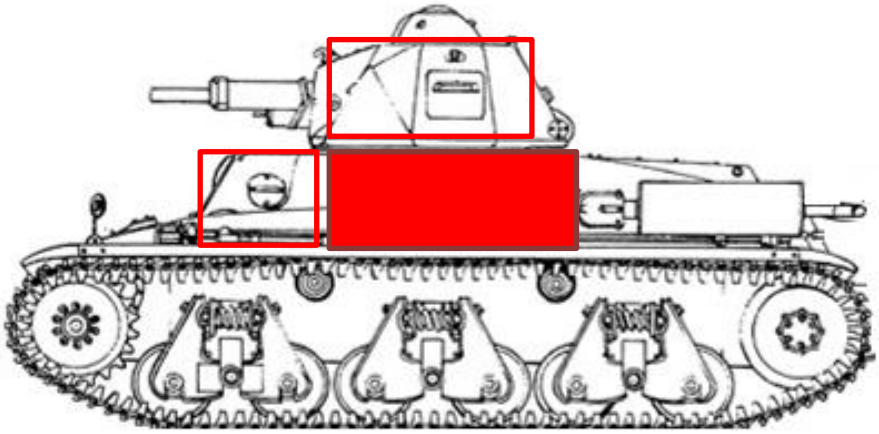
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

REAR AIM POINT: AIM CENTER MASS ON THE REAR HULL / TOUGHER KILL FOR STUH42 ON REAR DECK

HEAT

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

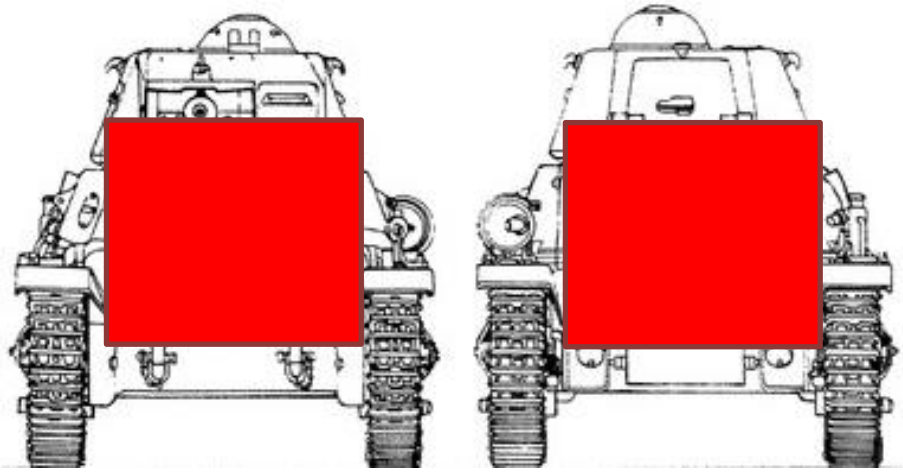
Section XI(k): How to Kill - Hotchkiss H39



FLANK AIM POINT: VERTICAL PLATE

AP

MAXIMUM RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)



FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL

HEAT ONLY! TOUGH ARMOR ANGLES FOR AP

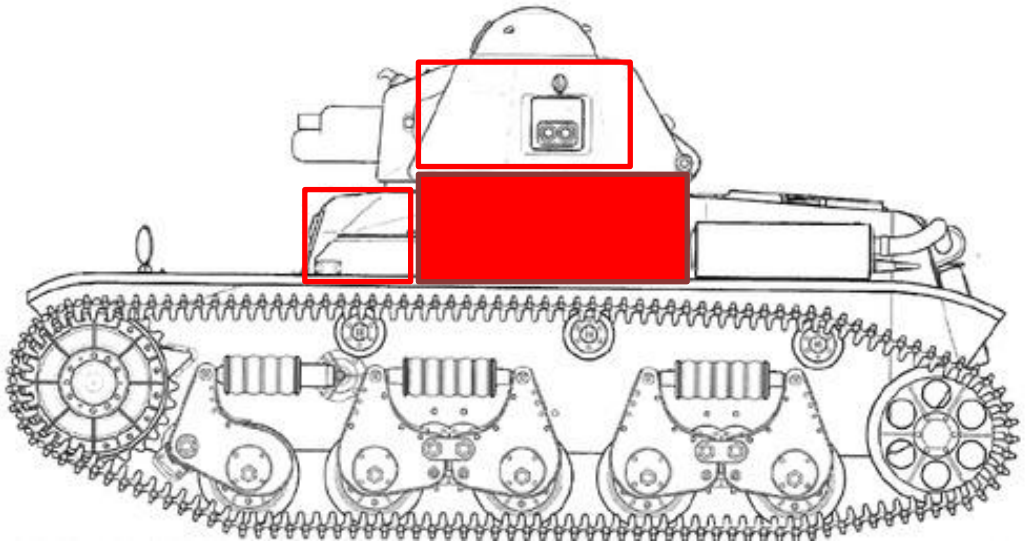
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS

REAR AIM POINT: AIM CENTER MASS ON THE REAR HULL

AP

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)

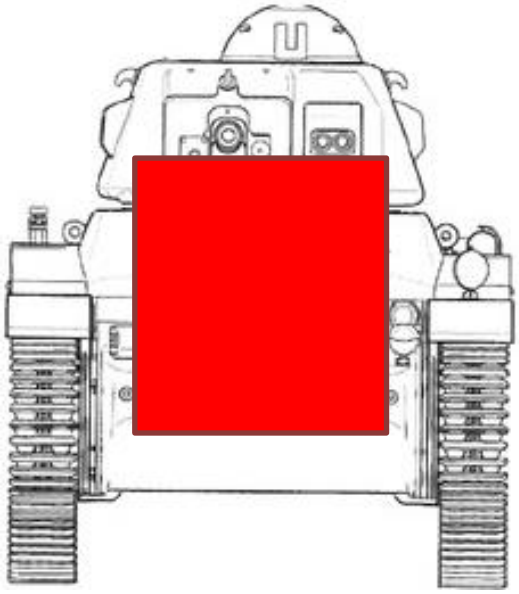
Section XI(l): How to Kill - Renault R35

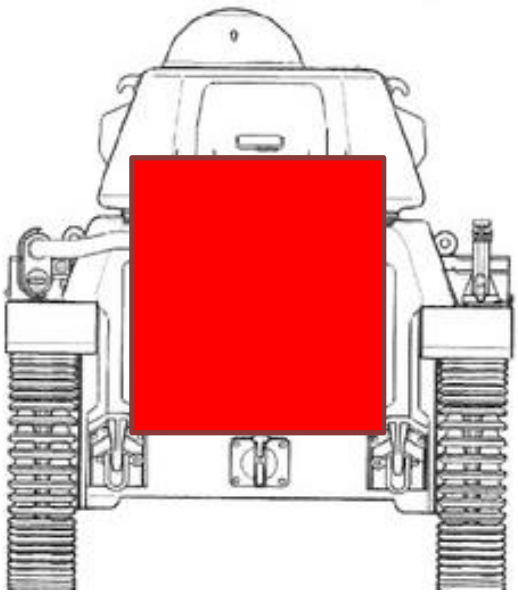


FLANK AIM POINT: VERTICAL PLATE

AP

MAXIMUM RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)





FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL

AP

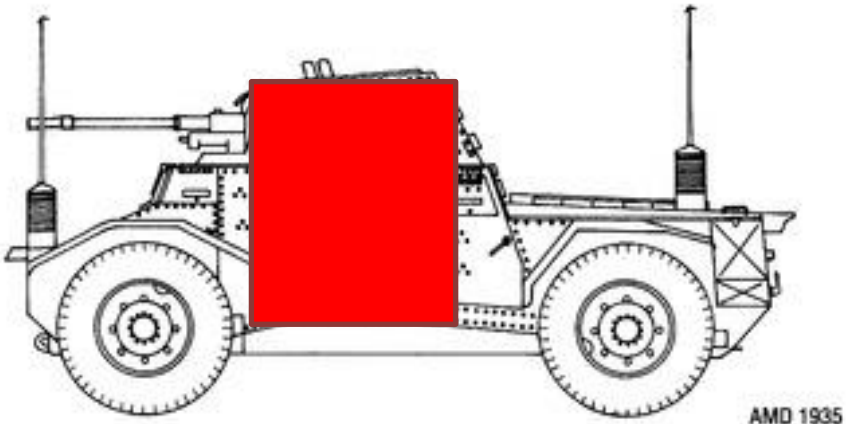
MAXIMUM ENGAGEMENT RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)

REAR AIM POINT: AIM CENTER MASS ON THE REAR HULL

AP

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)

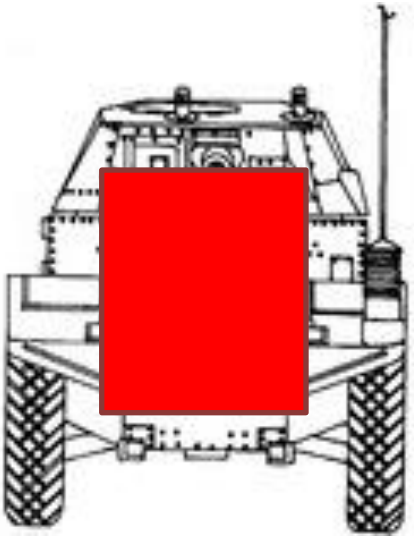
Section XI(m): How to Kill - Panhard 178 AMD

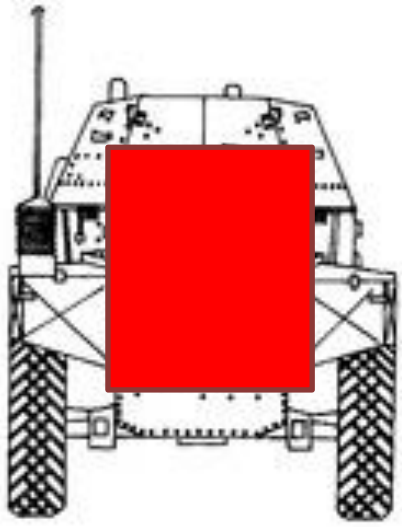


FLANK AIM POINT: VERTICAL PLATE

AP

MAXIMUM RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)





FRONT AIM POINT: AIM CENTER MASS ON THE FRONT HULL

AP

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)

REAR AIM POINT: AIM CENTER MASS ON THE REAR HULL

AP

MAXIMUM ENGAGEMENT RANGE: 1,000 METERS (SMALL TARGET – TOUGH TO HIT)

Section XII: Additional Information

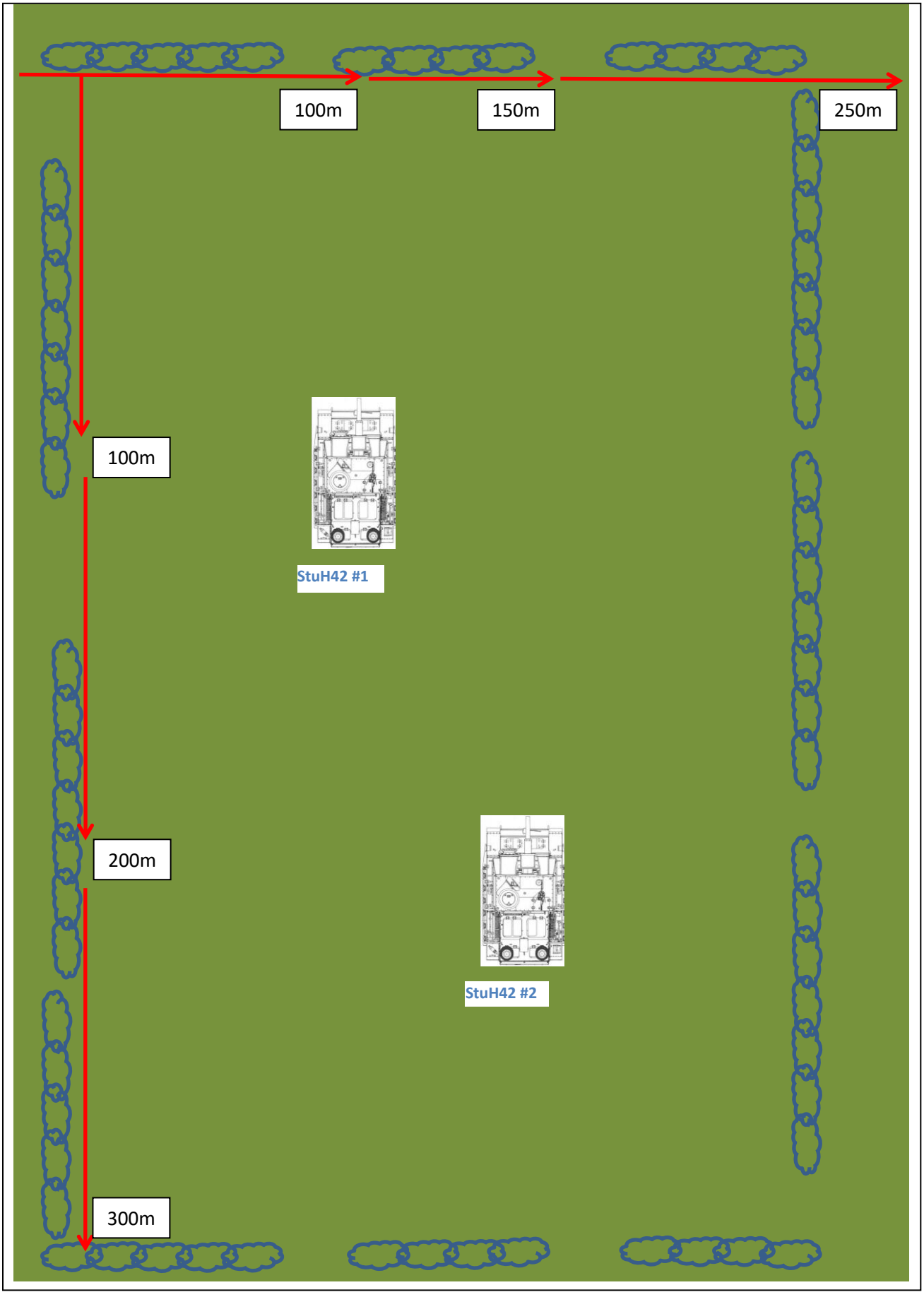
Massed Fires (Assault Battery Formation)

Direct Line of Sight (LOS) is still needed at this time so a clear, unobstructed view is best when using the StuH42. Given the dense foliage that dominates the majority of all terrain in WW2OL, the best advice would be to find an open field or the most open space which forces enemy anti-tank troops to close on your position without cover. Allowing you to either retreat (which is comical but an in-game reality) or provide your security element the opportunity to quickly and easily identify and kill the sapper prior to him placing any charges.

A staggered firing line is best as it provides greater peripheral vision for the trailing position. A working theory is that a StuH42 platoon of 2 StuH42s deployed in a staggered alignment with a squared shaped formation of 250m WIDE x 300m DEPTH could provide some temporary level of security should separate each StuH42 to the front, sides, and rear.

Until the security element arrives or if none is forthcoming, the StuH42 is simply trading space for time when assaulted either by a sapper or a bazooka anti-tank soldier(s). Security of your position will be discussed in **Section XIII: Supporting Responsibilities - Security**.

StuH42 Assault Platoon Deployment



StuH42 Platoon Deployment

Section XIII: Supporting Responsibilities

Security

A security element is highly advisable to all tanks and self-propelled guns in WW2OL. The game is so vast and so much cover for enemy infantry and anti-tank guns that the more friendly eyes watching the flanks or "six" can only improve your platform lethality, ability to impact the battle, AND sustain your time on the battlefield.

If you look at the "StuH42 Platoon Deployment" picture then realize that all infantry in game move at 6 meters PER SECOND from the get-go until their stamina is exhausted. Enemy infantry can easily cover 100 meters in-game and have plenty of sprint stamina but it does buy you a few seconds to move and call for help if you have no friendlies near your position.

A "light" security element could be a single sharp-eyed infantry but that is a lot to ask of a single player so several infantry to include an LMG off-set at the rear of the formation may be needed. Of course, having a mobile spawn handy is a huge benefit to have as well. The use of light flak guns, armored cars, or light armor are very helpful as they have a zoomed gunsight and rapid fire weapons which can decimate soft targets easily.

A "heavy" security element would not only include armor with anti-tank capabilities but also anti-tank guns greater than 37mm and the bofors AAA gun to ward off enemy aircraft which will approach your position once you begin to have some success.

The Role of Engineers

Engineers can be very helpful whether that is to dig a quick defensive position to camouflage and fortify each individual positions but the use of hasty barb wire obstacles can prevent OR canalize enemy troops into certain areas which are covered by friendly automatic weapons when they attempt to assault the battery.

Focus on the immediate defense PPOs for the StuH42 then expand as time permits. Two engineers working together can make a significant impact in a short period of time. There may be an opportunity, time to time, where the engineers can begin the initial defensive positions PRIOR to the arrival of the battery; falling back to a mobile spawn. Respawning with automatic weapons to sweep through the area and armor could overwatch the area as the battery begins to move forward.

It must be understood that the role of the battery is NOT to get as close as possible – distance from the objective is LIFE. After you have killed a few enemies expect armor or air to show up so it is important to work together and to TRAIN together so that gamers know their individual roles when the battery is assembled.

Supply

Supply with the StuH42 this will ALWAYS be critical. A friendly ammo cache either through a truck or half-track or even an NCO Leader can drop an ammo box to resupply the battery. Ideally, there should be an ammo box for each StuH42 as the platform has a limited supply of ammo.

Section XIV: Importance of Plunging Fire

Depots

Plunging fire into destroyed capture points (CP) or depots wreak havoc on infantry and anti-tank guns trying to leave the spawn facility. Once you have blown the depot (3 HE rounds from the StuH42), you can concentrate raining HE between the depot and the CP; being careful not to blow the CP if it has not yet been blown as it will kill friendlies insides and may help enemy infantry suppress the CP you are trying to capture with small arms fire, grenades and leaping infantry onto the roof or second floor.

Forward Bases

There are visual rendering limits for enemy infantry so if you are engaging an FB from a great distance you need to focus on armor, anti-tank guns, or triple-a guns which come from the vehicle spawn at the FB. At present, enemy infantry at greater than 700 meters are unlikely to be killed by a HE shell from the StuH42; at least not until the rounds become STO (server tracked objects). Imagine plunging fire into the infantry spawn as that big 10.5cm round comes arcing down onto its target – fantastic explosions and shrapnel galore!

Open / Walled Army Bases

Army Bases are overwhelmed with consistent tank and air firepower on the objective followed closely by massed infantry on the final objective. That one sentence is so easily written and so hard to execute; particularly in a walled AB town which is the vast majority of the towns on the map. This is really where several dedicated units working together can tip the scales decidedly in favor of the Axis when we have sufficient numbers to secure the depots and still exerting pressure on the AB. Many times we attack in lemming waves bleeding massive amounts of infantry, in particular, automatic weapons.

It is critical to deploying a few high-arcing guns combined with some terrain elevation can effectively place plunging rounds that can kill, disable, or force a despawn of a tank that is tucked into a corner, near a building, etc that friendly aircraft or sappers cannot access. This is where a combination of 75mm stump-cannons from the Stug3B, PzrIVD, Pzr IIIN, or the large 10.5cm howitzer StuH42 firing AP and HEAT rounds onto the rear decks of enemy tanks will experience great success; not to mention the HE shells to cut down enemy infantry, anti-tank or aaa-guns which prevents our infantry or airplanes during the final assault.

A dominating and elevated field of fire combined with some defensive works make for an excellent position to exert maximum carnage and suppression onto your enemy.

Exerting a similar formula for an open AB will yield the same results – VICTORY!

Make sure you have your security in-place to protect this artillery element!! But we've already talked about that previously. ☺

Section XV: Demolition

The 10.5cm howitzer HE shell has the most destructive power of any Axis platform and the StuH42 is made for building destruction. Why is this important? Clearing sight lines for other supporting guns is helpful plus destruction of the buildings does make it easier for friendly infantry to sweep thru buildings without being surprised. An additional benefit of this is enemy sappers and anti-tank soldiers will have a more difficult time to reach our tanks in an urban environment as the enemy is more likely seen when moving through devastate city blocks. Of course, the building destruction does provide unique enemy sniper and LMG hiding places so it is important to spot, sweep and secure dominating field of fire position particularly when moving to assault the bunker. Knowing the when and how many that are attacking is precious intel for the enemy. Deny them this intel and secure the bunker for a victory!

Below is a wide-ranging Demolition Table which indicates how many StuH42 HE rounds it takes to implode a particular structure in WW2OL. Uniquely, sometimes it really matters whether or not you are firing into the flank of a building or firing on it frontally. This table may not be 100% complete but I think you will find this information helpful and comprehensive. As always when beginning to demolish a building, make sure you have ammo and security on-hand!

WW2OL Building Demolition Table – StuH42		
PICTURE	**DESCRPTION**	**SHELLS NEEDED**
	3-story spawn depot	2 shells from 10.5cm
	Capture Point Building	15 shells from 10.5cm
	Naval Docks	2 shells from 10.5cm
	Church (large)	20 shells from 10.5cm (Stuh42) 48 shells from L24/75mm (StuG3B)

	Small Mission Church	11 shells from 10.5cm
	3-story with attic city block (three total buildings)	Front - 13 shells from 10.5cm Side - 7 shells from 10.5cm
	3-story with attic city block (three total buildings) with BROWN brick and PINK/ROSE bands of brick	18 shells from 10.5cm
	3-story yellow apartment building	5 shells from 10.5cm
	3-story corner apartment block with 3 total buildings	5 shells from 10.5cm
	Brown brick storefront with red door (twin peaks)	Front - 6 to 7 shells from 10.5cm Side - 5 shells from 10.5cm

	Factory / warehouse block with 2 smoke stacks	6 shells from 10.5cm (Stuh42) for the 1st half of factory. 1 additional shell drops the second half and second smoke stack.
	Manor house and garage	5 shells from 10.5cm
	2-story boardinghouse	3 shells from 10.5cm
	2-story large warehouse	7 shells from 10.5cm
	Gas Station	2 shells from 10.5cm

Bridges

Bridges CAN be destroyed by a StuH42 but it will be a long project as it takes multiple HE rounds just to register a small percentage of damage. Where this feature comes in handy is when the StuH42 is over-watching a bridge, not only can you prevent combat engineers from rebuilding the bridge with HE shells but you can deter them by continuing to damage the bridge while they are repairing it. Remember, ammo and security!

Section XVI: The Future

Custom Ammo Loadouts

I think the load-outs below provide some flexibility for the platform to function in various roles. Due to the demonstrated tank killing capabilities of the AP round at 1000 meters or less the "Assault" load-out is weighted more to the AP shell with a nice handful of HEAT for those situations and platforms that require HEAT for success. The biggest win for the "Support" load-out is more Smoke shells. Smoke is key during assaults on important objectives such as a spawnable depot or bunker. With the time it takes to resupply, the StuH42 can restock via an ammo cache to sustain an effective smoke screen when needed. I even considered dropping the four anti-tank rounds altogether for a "true" Support load-out of only HE and Smoke shells at 26 and 10 shells respectively.

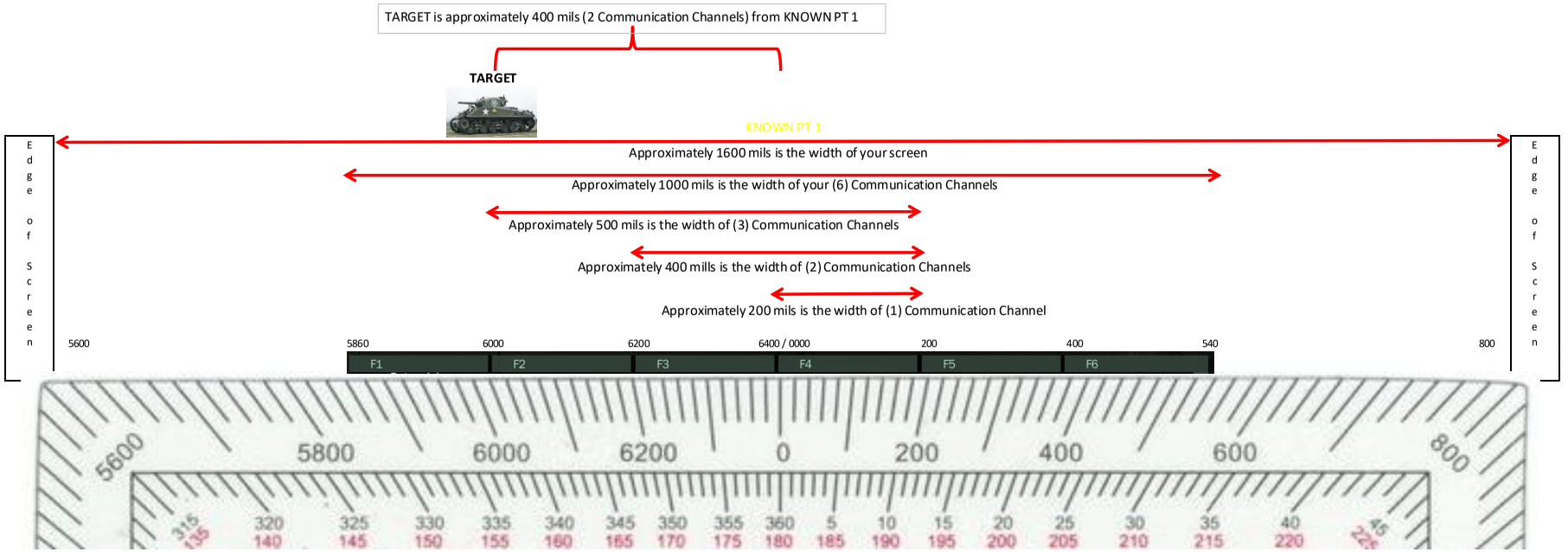
- Standard load-out: 26 HE, 4 AP, 4 HEAT, & 2 SMK = 36 shells
- Assault load-out: 10 HE, 16 AP, 6 HEAT & 4 SMK = 36 shells
- Support load-out: 26 HE, 2 AP, 2 HEAT, & 6 SMK = 36 shells

Indirect Fire & How-To Tools

The next page is an aid in how a Forward Observer (FO)can work NOW in WW2OL with STO weapons such as mortars and destroyers.

The following pages after the FO Aid show how the information gained by the FO and relayed back to the server tracked object (STO) platform are interpreted then implemented into adjusting the fire of the STO platform; subsequently onto the target.

Forward Observer Screen: A mils perspective in the game world



Mils Table	
Full Screen	1600
6 Tabs	1000
3 Tabs	500
2 Tabs	400
1 Tabs	200

Working with a Forward Observer and Lateral Fires

Working with a Forward Observer (FO) can be a challenge but if you work as a team and do not get frustrated in the early stages, you will begin to find success as you become more comfortable and familiar with the tools which enable the FO and the gun / battery firing.

The following information is a simplified system of how the US Army Artillery adjusts fire based up a Known Point (KP) and the distance of the FO to the target (TGT). It's known as the "WoRm" table (Width over Range times Mils).

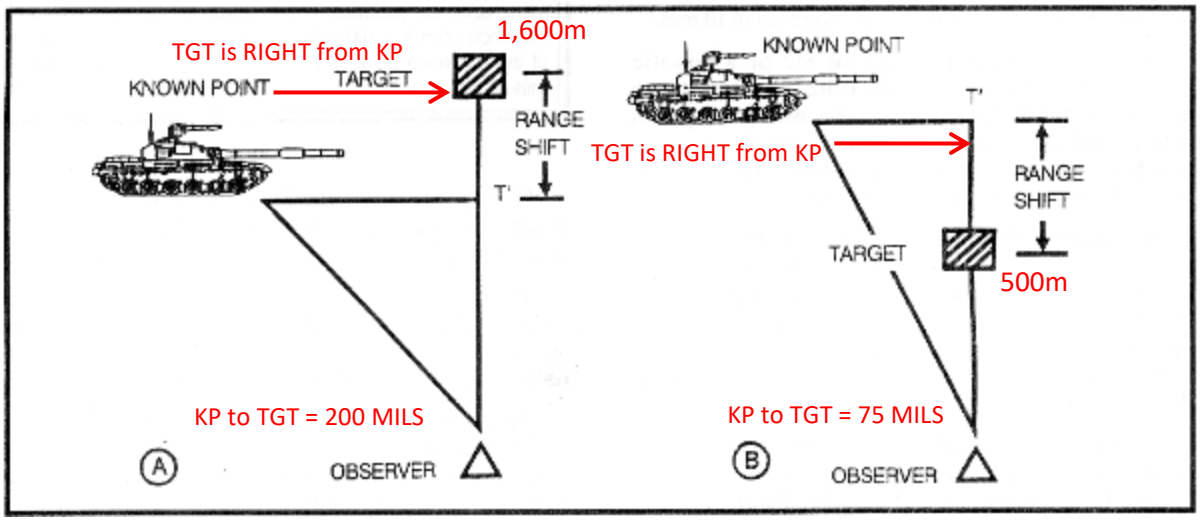
The "WORM" Table

Step 1: Identify a Known Point (KP). (Ex: It could be a depot or significant terrain feature.)
Step 2: The FO judges the distance from their position to the target (TGT).
Step 3: Using the CHAT TABS, the FO determines the difference in MILS between the KP and the TGT
Step 4a: If the number of MILS is GREATER than 1,000 MILS then DIVIDE by 1000 and round-up at 0.5 to the next whole number.
Step 4b: If the number of MILS is LESS than 1,000 MILS then DIVIDE by 1000 and use the DECIMAL number (no rounding up).
Step 4c: The results from 4a or 4b are known as the Observer to Target (OT) Factor.
Step 5: Multiply the OT Factor number by the MILS difference you determined in Step 3.
Step 6: The FO advises the STO platform where the TGT is in relation to the KP (LEFT or RIGHT)
Step 7: The data from Step 5 is the DISTANCE or MILS that the STO platform will need adjust laterally to engage the TGT.
Step 8: Is there a VERTICAL factor (elevation) that needs to be considered.

After Firing:

Step 9: Should the TGT be parallel, in front of, or beyond the KP, the STO can make range adjustments based upon PLUS / MINUS information from FO.

Let's work through several examples on the next page.



Example A

Step 1: TGT	TGT Box	Step 6: STO Mils	400 MILS	STO Platform:
Step 2: TGT Distance	1,600m	Step 7: Left/Right	RIGHT	#1) Orient gun (as needed) to KP
Step 3: Difference	200 MILS	Step 8: Vertical	None	#2) Establish range to KP
Step 4: OT Factor Multiply or Divide by 1000	1.6 OT Factor (1600 / 1000)	Step 9: Adj after firing		#3) Adjust gun RIGHT 400 MILS
Step 5: Mils x OT	200 x 2.0 = 400 MILS (1.6 rounded up = 2.0)			#4) Fire weapon
				#5) Adjust on FO feedback

Example B

Step 1: TGT	TGT Box	Step 6: STO Mils	56 MILS	STO Platform:
Step 2: TGT Distance	500m	Step 7: Left/Right	RIGHT	#1) Orient gun (as needed) to KP
Step 3: Difference	75 MILS	Step 8: Vertical	None	#2) Establish range to KP
Step 4: OT Factor Multiply or Divide by 1000	0.75 OT Factor (75 / 1000)	Step 9: Adj after firing		#3) Adjust gun RIGHT 56 MILS
Step 5: Mils x OT	75 x 0.75 = 56 MILS (56.25 rounds down = 56)			#4) Fire weapon
				#5) Adjust on FO feedback

The FO is estimating the MILS difference between the KP and TGT using the CHAT BAR TABS as a rough in-game guide.

Chat Tab Mils Table

Full Screen	1600
6 Tabs	1000
3 Tabs	500
2 Tabs	400
1 Tabs	200

Interpreting the FO Data

You must first orient the gun platform to the KP then adjust your gun based upon the data from the FO.

From your gunsight view on the StuH42 the maximum traverse of the weapon is 20^ degrees or approximately 350 MILS. Anything OVER 350 MILS will require you to re-orient your gun.

If your orientation onto the KP requires LESS THAN 350 MILS to engage the TGT, you can adjust the gun several different ways.

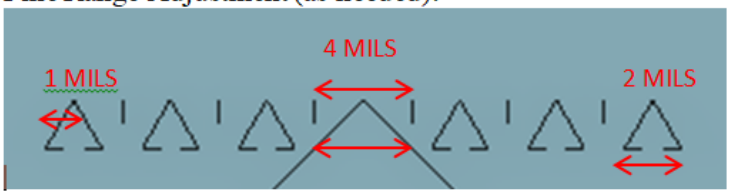
In Example A, the result was 400 MILS to the RIGHT of the identified KP so you KNOW you have to re-orient your gun platform to the RIGHT at least 1 quadrant (or 20 degrees or 350 MILS. See "StuH42 Weapon Traverse" below). This gets you in the same zip-code but let's see if we can get even closer with the first round. We are still roughly 50 MILS short from the desired line of fire to engage the TGT. We know that the entire StuH42 gunsight view is 26 MILS wide so from your standard gunsight view (not zoomed in) begin traversing the gun to the RIGHT until you have moved it approximately the width of the gunsight two times. This should bring you fairly close to begin to engage the TGT and your FO should be able to observe your fire and communicate the necessary adjustments.

StuH42 Traverse Table

MILS	TURNS	DEGREES	MILS	TURNS	DEGREES
18	10	1	196	110	11
36	20	2	214	120	12
53	30	3	231	130	13
71	40	4	249	140	14
89	50	5	267	150	15
107	60	6	285	160	16
125	70	7	303	170	17
142	80	8	320	180	18
160	90	9	338	190	19
178	100	10	356	200	20

StuH42 Weapon Traverse

Fine Range Adjustment (as needed):

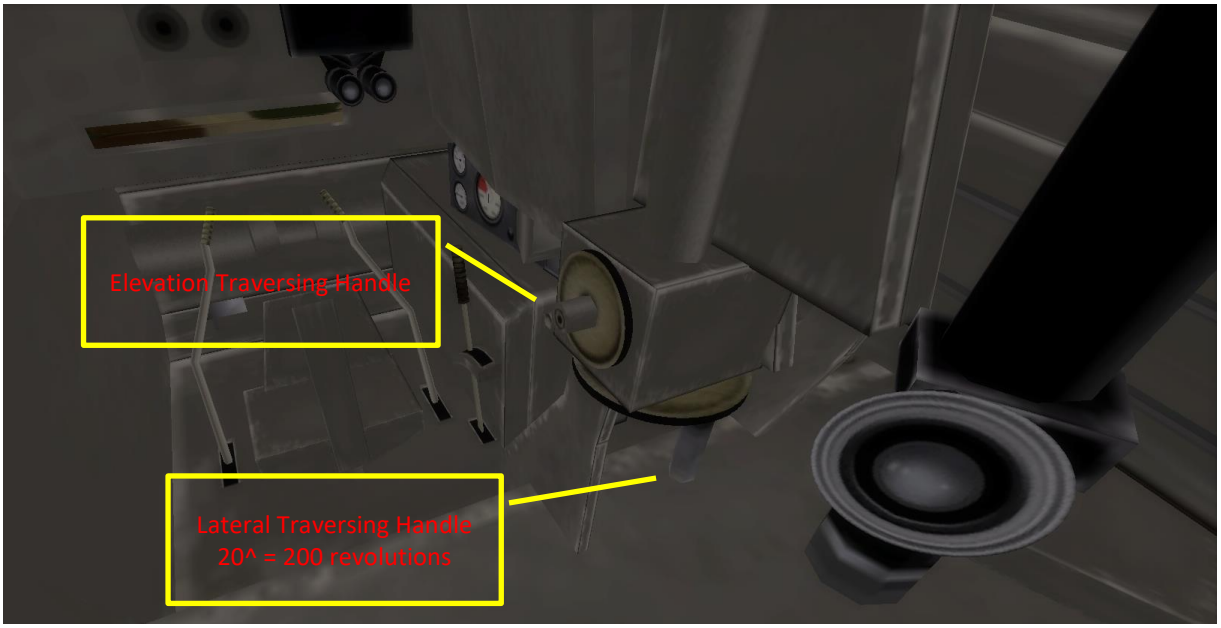


24 MILS across the top & 26 MILS across the bottom

- Half of the gunsight equals 12 MILS across the "top"
- Across the top each "point" or "dash" equals 2 MILS.
- 1 MIL of LATERAL TRAVERSE = 1 METER of distance up to a range of 2,000 meters

Example B is a little different though with only an adjustment of 56 MILS from the KP to the TGT so if the STO is already oriented then no movement is required. We simply have to adjust to the RIGHT 56 MILS.

We can either use the gun traverse method or use another method which allows you to adjust the gun in fine detail as needed. This method requires you to count the revolutions of the LATERAL TRAVERSING handle. Of course you can do that but it takes time, don't lose your place or count, etc so I don't necessarily recommend doing that method at this stage but if you wanted to go to your gun position (without hitting the zoom feature) so you are looking inside the platform then press "N" to unlock free-view and move your mouse down and to the right to see the LATERAL TRAVERSING handle. Push your joystick in the direction you want the gun to move and you will being to see it spin and you begin counting revolutions. For approximately every 1 revolution you move the gun approximately 1 MIL (it's not exactly accurate but this approximation DOES get you close to the target).



So we know now from the above approximation that 1 revolution of LATERAL TRAVERSE (LT) equals 1 MIL (1 LT:1 MIL). Furthermore, from testing EACH MIL equals 1 METER of LATERAL distance up to at least 2,000M when adjusting your fire LATERALLY. Therefore if your FO advises that you are X number of METERS off-target, you simply need to adjust Y number of MILS to accurately adjust your fire. Then it becomes simply a matter of range (ADD / DROP); all the while recognizing that dispersion will ALWAYS play a part with indirect fire.

As we get into ranges up to 3,000 meters and greater, this approximate equation begins to dramatically increase in error so further testing will be needed when that glorious day arrives. ☺

On the next page is a handy aid for the "Observer to TGT (OT Factor) Range Table"

Observer to Target (OT Factor) Range Table

Tips: More than likely you will use the "Less than 1km" table due to no long-range STO rounds currently.

FO & Gunner Working Together - Steps:

Step 1) ID Known Point (KP)

Step 2) Estimated range from OBSERVER to TARGET (TGT) divided by 1000 = OT Factor

Step 3) Using the CHAT TABS, FO determines the MILS difference between the KNOWN POINT (KP) and TGT

Step 4) Based on Range to TGT consult the appropriate '**Greater than** / **Less than 1km**' table to determin OT Factor

Step 5) OT Factor X MILS = Distance of TGT from KP in MILS

Step 6) Determine LATERAL shift (LEFT or RIGHT) . with MILS OT Factor data

Step 7) STO ranges to KP and adjusts with MILS OT Factor data

Step 8) Consider terrain elevation to TGT (if applicable)

Step 9) UPDATE range information (ADD/SUBTRACT range to TGT in relation to KP - in front of, even with, or beyond)

EXAMPLES #1 & #2:

Indirect Fire fires at a KNOWN POINT (KP) - it could be a building or a way point on the map that is near TARGET.

Step 1) Range OBSERVER to TGT is 2000m (EX1: 2000 / 1000 = 2.0) OR 800m (EX2: 800 / 1000 = 0.8)
** 2.0 or 0.8 are the known values identified as the OT factor **

Step 2) OBSERVER determines there are 200 MILS from the KNOWN POINT to TGT

Step 3) Consult "Greater than 1km" table and cross-index the OT factor of 2.0 to 200 MILS = 400m lateral shift (the TGT is 400m left or right from the KP) or consult the "Less than 1km" table and cross-index the OT factor of 0.8 to 200 MILS = 160m lateral shift (the TGT is 160m left or right from the KP)

Step 4) From location of where Indirect Fire landed, advise the LATERAL SHIFT or ADD/SUBTRACT as

Range Greater than 1km from Observer to Target Table: Divide by 1000 To Get Whole Number (EX: 1.5 becomes 2 and 1.4 becomes 1.0)

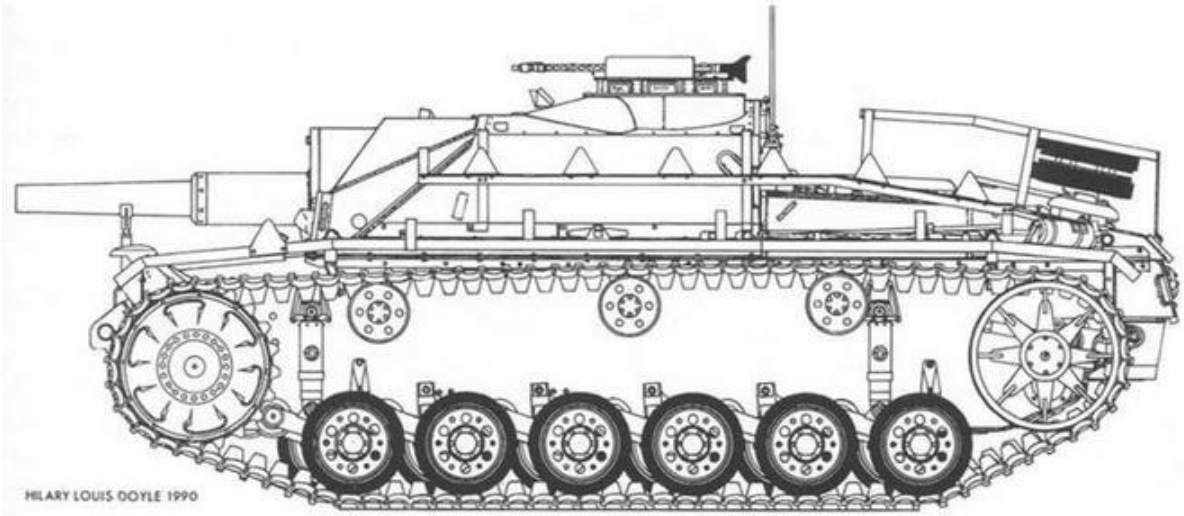
+ OT	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)
1.0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	800	900	900	1000	1000
2.0	100	200	200	400	300	600	400	800	500	1000	600	1200	700	1400	800	1600	900	1800	1000	2000
3.0	100	300	200	600	300	900	400	1200	500	1500	600	1800	700	2100	800	2400	900	2700	1000	3000
4.0	100	400	200	800	300	1200	400	1600	500	2000	600	2400	700	2800	800	3200	900	3600	1000	4000
5.0	100	500	200	1000	300	1500	400	2000	500	2500	600	3000	700	3500	800	4000	900	4500	1000	5000
6.0	100	600	200	1200	300	1800	400	2400	500	3000	600	3600	700	4200	800	4800	900	5400	1000	6000
7.0	100	700	200	1400	300	2100	400	2800	500	3500	600	4200	700	4900	800	5600	900	6300	1000	7000
8.0	100	800	200	1600	300	2400	400	3200	500	4000	600	4800	700	5600	800	6400	900	7200	1000	8000
9.0	100	900	200	1800	300	2700	400	3600	500	4500	600	5400	700	6300	800	7200	900	8100	1000	9000
10.0	100	1000	200	2000	300	3000	400	4000	500	5000	600	6000	700	7000	800	8000	900	9000	1000	10000

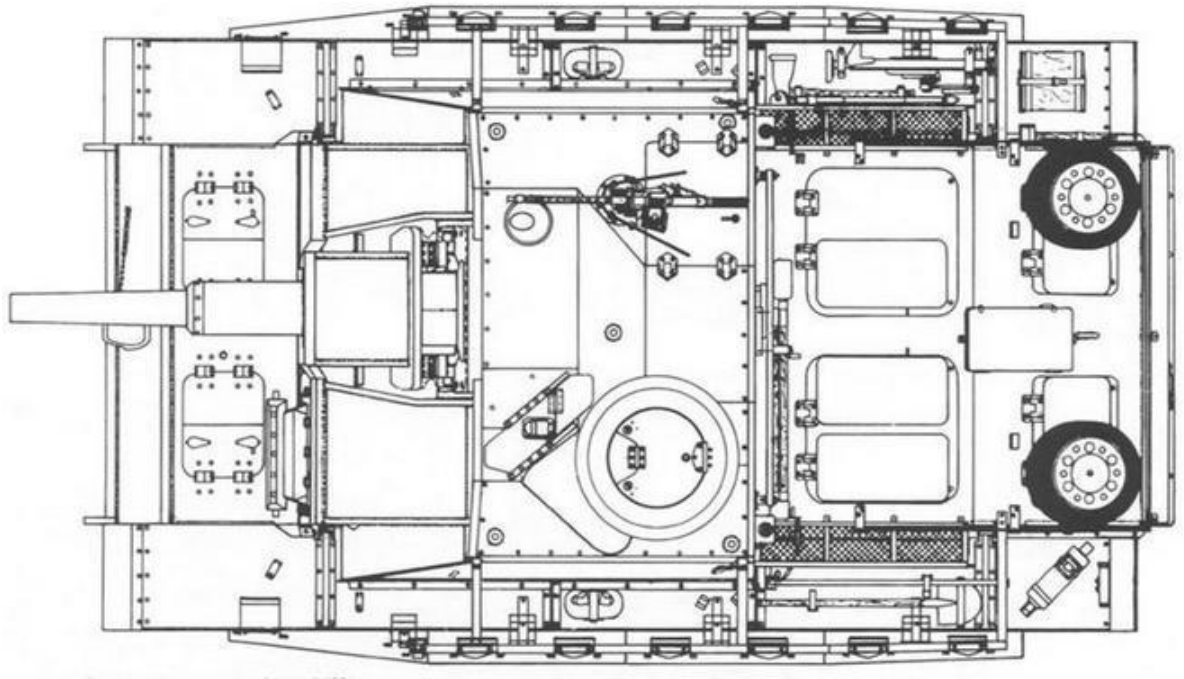
Range Less than 1km from Observer to Target Table: Divide by 1000 To Get Decimal Number (EX: Range 800 / 1000 = 0.8)

- OT	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)	MILS	SHIFT (M)
0.1	100	10	200	20	300	30	400	40	500	50	600	60	700	70	800	80	900	90	1000	100
0.2	100	20	200	40	300	60	400	80	500	100	600	120	700	140	800	160	900	180	1000	200
0.3	100	30	200	60	300	90	400	120	500	150	600	180	700	210	800	240	900	270	1000	300
0.4	100	40	200	80	300	120	400	160	500	200	600	240	700	280	800	320	900	360	1000	400
0.5	100	50	200	100	300	150	400	200	500	250	600	300	700	350	800	400	900	450	1000	500
0.6	100	60	200	120	300	180	400	240	500	300	600	360	700	420	800	480	900	540	1000	600
0.7	100	70	200	140	300	210	400	280	500	350	600	420	700	490	800	560	900	630	1000	700
0.8	100	80	200	160	300	240	400	320	500	400	600	480	700	560	800	640	900	720	1000	800
0.9	100	90	200	180	300	270	400	360	500	450	600	540	700	630	800	720	900	810	1000	900
1.0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	800	900	900	1000	1000

Elevation Ranging and Firing

A ranging methodology (excluding the commander range finder) has been developed that works out to approximately 2,000 meters; however, there is a bug that occasionally pops up when frequently switching between the Commander and Gunner positions and invalidates any previous ranging information. Until that bug is fixed no further testing can be done to confirm the range data using the proposed methodology.





Scale drawings of a Sturmhaubitze as produced in 1945.

Now for some funny pictures . . .

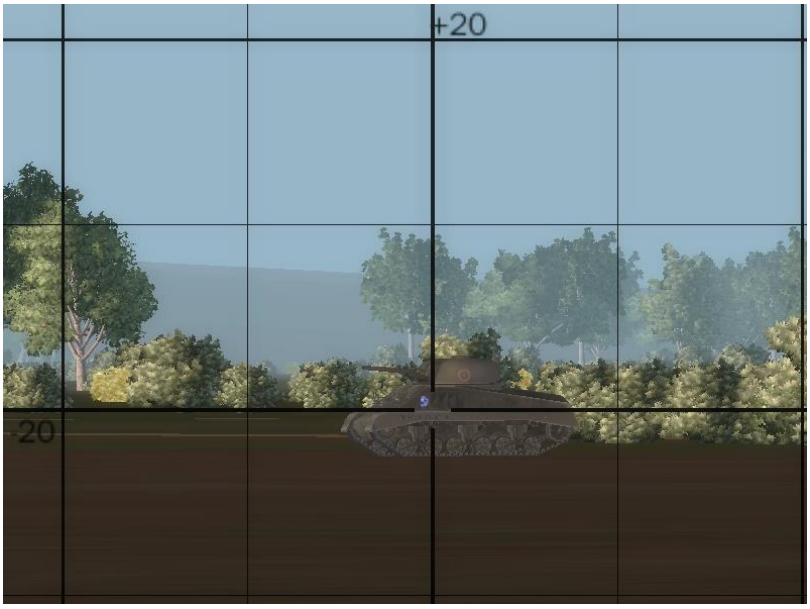


Figure 2: Commander's View - 500m

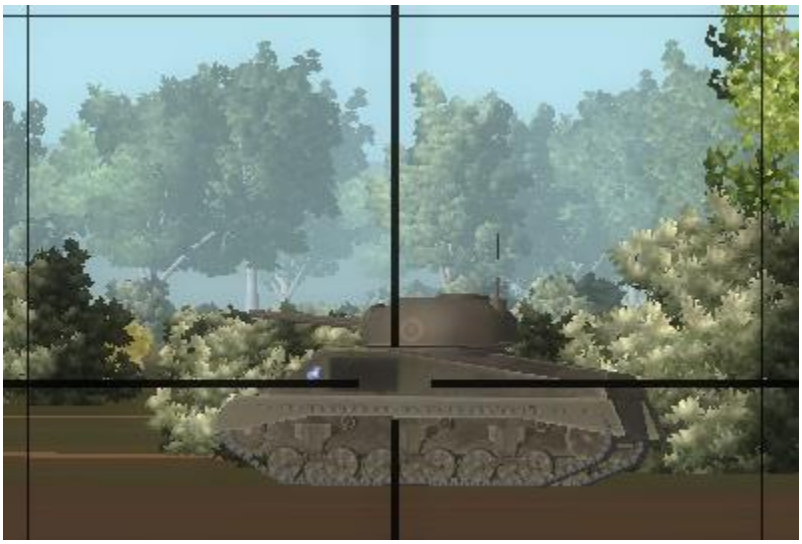


Figure 3: Commander view zoomed - 500m


Figure 4: Left flank - AP round - 500m

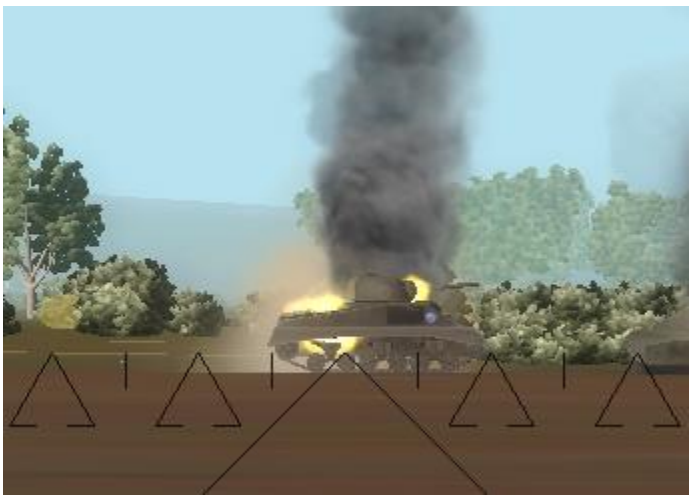


Figure 5: Right flank - AP round - 500m

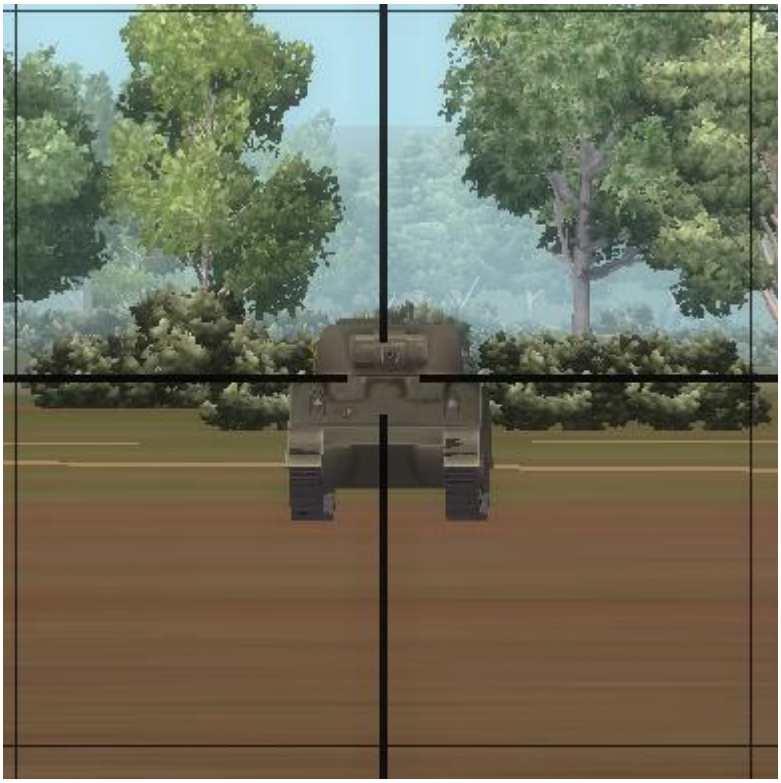
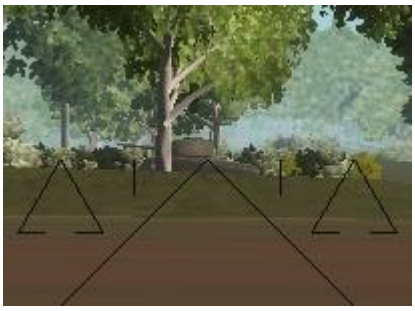
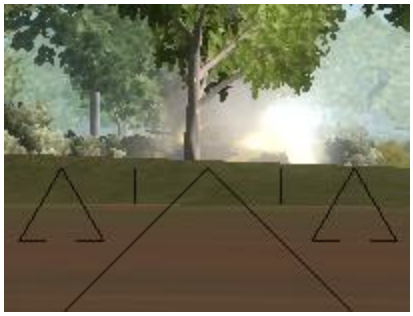


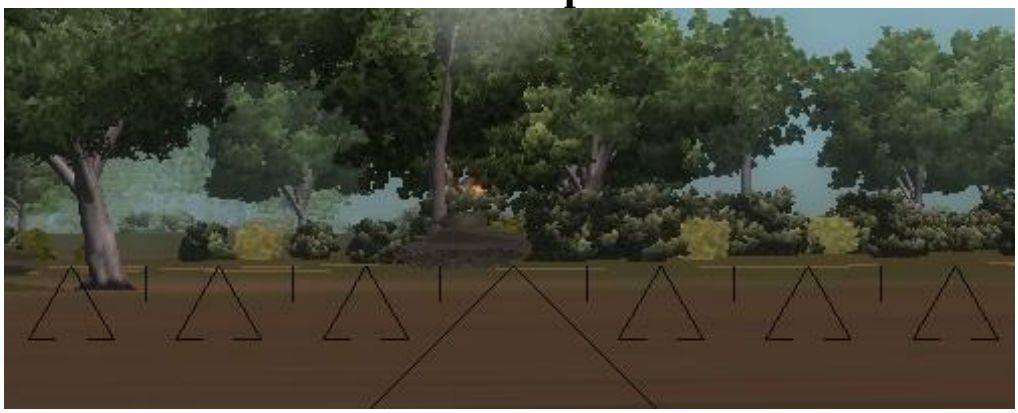
Figure 6: Sherman Flank at 700m





And now . . .

Brace for impact!!!



THE END AND GOOD LUCK!!