Explanation of Panzer Commander Excel VDF Files.

The Vehicle Definition Files (*.VDF) are text files (viewable in Notepad) located in the Models folder of Panzer Commander. Each VDF file contains data describing the performance of a single vehicle, antitank gun or emplacement. The subject matter of this document is limited to Armoured Fighting Vehicle (AFV) VDF's. Further information on VDF files can be found in the Panzer Commander FAQ (PzCFAQ) document.

This material should provide a clearer understanding of the technical and tactical characteristics of the vehicles modelled in Panzer Commander V1.3. Many of these vehicles have been newly added for this version of Panzer Commander.

All values listed are the values utilised when calculating and modelling the effects of these technical and tactical characteristics.

When you look at the muzzle velocity and shell weight given here and compare it to the muzzle and shell weights listed in other sources for that particular gun, such a comparison will sometimes show a difference in the muzzle velocity and shell. Why is this so? Muzzle velocity will differ because we have used exclusively the muzzle velocity of the APCBC shell since all units were equipped with APCBC shells of some sort but many never received APDS, APCR and HVAP rounds. We have also chosen to model ONLY the weight of the penetrator portion of the shell since the penetrator was the only portion of the shell which transferred kinetic energy to the target and contributed towards penetration. Very few publicly available books will make a differentiation between the weight of the overall shell (penetrator, casing, propellant etc) and the weight of only the penetrator portion.

The Panzer Commander 1.3 armour ratings will not match those found in standard works since we have chosen to show the "effective armour thickness" used when calculating penetrations. The "effective armour thickness" is the thickness of the armour multiplied by a factorial to account for the added protection which armour gives when sloped. Thus a tank with 60mm of armour sloped at 60 degrees from the vertical axis will yield an effective thickness of 120mm worth of protection. In the game the ballistic protection afforded by slope is also taken into account, but you do not need to know about that to evaluate the vehicles and change the vdfs yourselves. Allowance is also made for the effect of Schuerzen, three-dimensional sloping, face hardening etc., so be cautious about changing the armour values presented here. They are as correct as they can be given the engine.

Legend:

Caption:	The name of the tank and its model number.
Origin:	Country of origin.
Date:	Date in service.
Threat Value:	Determines the targeting priority which the AI assigns to vehicles of that type. A vehicle with a TV of 70 will be targeted as a higher priority than an accompanying vehicle with a TV of 20, for example.

Armour Ratings: These are the effective thicknesses of the armour for each of the facings mentioned. These ratings are of prime importance. Examine them and you may soon find the weak spot in your opponent's armour (literally!).

Using the Panther D as an example: If you are faced with the frontal armour of a Panther D you can, by aiming at the Hull Front reduce the amount of armour your shell must penetrate by some 25% which can be the difference between a non-penetrating hit and a blazing wreck. Many complaints on forums etc come from people who are unaware of their enemy's weaknesses.

Muzzle Velocity: The speed with which the shell leaves the barrel. This speed declines as it flies to the target due to air resistance and thus penetration also falls off as Kinetic Energy also decreases.

AP Shell Mass: The mass of the penetrating portion of the APCBC shell for that gun (or nearest equivalent).

Kinetic Energy: 0.5 mass x (velocity) squared = KE. The figure listed here is a rough indication of the penetrative power of a shell. Many people do not realise the realistic performances of the weaponry. This can lead to both overestimating their own vehicle's lethality and underestimating the enemy vehicle's lethality, with unpleasant results.

This line is included to help judge the penetrating power of the main gun. Generally the greater the KE the greater the penetrative power. Factors such as shell flight stability, tip hardness, aerodynamic design, shell balance etc., all combine to play a part in determining penetration. The initial kinetic energy shown here had the largest role to play. MN = MegaNewtons

AP ammunition: Rounds of Armour Piercing Ammunition stored in the tank.

HE Ammunition: Rounds of High Explosive ammunition stored in the tank.

Turret Traverse Speed: The number of degrees per second that the tank turret could traverse. Some tanks had turrets which could traverse at up to 30 degrees per second while others were crippled by poor turret traverse speeds. The Pz IV J had no electric traverse and had to be hand-cranked around at only 7 degrees per second - yielding a decisive engagement advantage to more manoeuvrable opponents at close range.

Max & Min Elevation: The maximum number of degree a tank's main gun could depress and elevate. Many Soviet tanks, due to their squat shape, had very limited gun depression and so it is eminently possible to close to such a range that they are unable to engage you when they are in a hull-down position. This is an instance where study of these tables may yield tactical advantages.

Co-axial MG & Hull MG: Y = Present, N = Not Present.

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