



The *Game Developers Guide to Shoot 'em ups* is a community-driven resource for game developers making Shoot 'em ups. The goal is to provide a resource that is created and curated by the community, for the community, that can help both new and veteran developers in making SHMUPS.

This document is full of purely text-based resources. This includes links, Do's and Don'ts, and submissions that have been or will be turned in to a guide sheet.

A quick reminder that this is a constantly changing document. If you are reading and things move, it probably means I or someone else has been making edits or putting submissions in.

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By **Shinu Real Arts**, developer of [Wings Of Bluestar](#). ([Alt. Link](#))

Here are some tips on creating a shmup. Those are from my own experience and from the feedback and tips I gathered from shmups players and developers during those 2 years plus working on my project.

Here we go:

-Contrast and composition:

The contrast between foreground and background elements should be very visible. In order to achieve that, it's highly recommended to know about composition and how to use saturation, brightness, and atmospheric depth to achieve it.

-Sprites depth:

Enemy bullets should be above everything, even above the players fire. And among enemy bullets themselves, smaller ones should appear above bigger ones.

-Bullets death:

Both enemy bullets and player fire should get destroyed if they touch a solid object and leave a dead animation. That way, the game gets a good feel for physics and logic.

-Enemy attacks:

Enemies should never fire from the corners of the screen.

-Bullet colors:

One should avoid that different bullet patterns have the same sprite/color.

-Solid obstacles:

Obstacles that kills the player and block their fire should also kill enemies and block their bullets. Otherwise, the player will take it as an unfair system in favor of enemies.

-8 ways directions:

The classic way of doing 8 ways directions has a flaw, in which the diagonal movement becomes direction speed multiplied in 1.4. This makes diagonal directions faster. There's a proper formula to fix this issue.

-UI:

UI shouldn't hide the action. If the UI is huge, try to make it move away or become transparent when the player is nearby.

-Collisions:

Never put the codes for collision and object detection inside bullets or items. If the screen is filled with those, you'll lose a great number of framerate. Instead, make the obstacles and the player check for collision with bullets, etc.

-Sneaky enemies:

Sneaky enemies that come from the bottom, rear and top of the screen are OK, as long as an alarm is provided, visual and sonar.

-Hiteffect:

When hit by player fire, enemies should have a flash or color change effect.

-Player fire:

The bigger the better.

-Out of screen:

Everything that goes out of the screen and that's not needed should get destroyed.

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Links submitted by **BB**, from the SHMUPS community Discord

[Shmup Theory - Anatomy of a Shmup](#)

[Shmups Forum Development stuff](#)

[Button Prompts - Those Awesome Guys](#)

[Free High Score board - Dreamlo](#)

[PolyGlot Gamedev Translation](#)

This is a link to the Polyglot videogame translations spreadsheet.

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Submitted by: **Boghog** developer of **REDPULSE**

(I am assuming people have already read the basic advice in Anatomy of a Shmup)

Basics for a vertical shmup :

Add an on-screen shot limit, or substitute it with another kind of proximity-based damage. This creates natural dynamic risk vs reward for movement and is present in nearly all classic shmups.

Add a dead zone at the top of the screen where player bullets can't hit enemies or some similar trickery so enemies have time to show up before they get blown up.

Allow enemy waves to overlap so the challenges feel inter-connected and players who control the screen get rewarded, instead of having discrete "enemies show up then leave" challenge screens.

Related to the previous point, make enemies hover in place and shoot for a while before flying off to make the player kill things more actively.

Mix foreground and background elements, destructible buildings, parked tanks, and other such background objects elevate stages from being simple backdrops to being more "real" and interactive.

Use enemy spawns as a trail to deliberately guide the player from one end of the screen to the other, this is very important for flow.

Make basic player shots travel very fast unless the slow bullets serve an important function. This is basic feedback, if a player presses the shoot button they expect results.

Besides having a lot of popcorn type enemies, keep enemy health as low as possible. When things die fast, players feel happy.

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Instruction Card submitters:

**Shinu Real Arts:**

- DoDonPachi Long Instruction Card
- Espgaluda 2 Long Instruction Card
- ESP RA DE Long Instruction Card
- Wings of BlueStar Instruction Card

**Retrocade Media**

- Dangun Feveron Instruction Card
- DoDonPachi Instruction Card
- Existential Crisis 2 Instruction Card
- Truxton II Instruction Card