

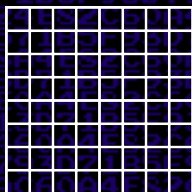
# ARCADE FONTS

Games needed to convey information to the player, in just about every game. Scores, instructions, alerts, and the gentle invitation to insert some currency and play, need to be conveyed.

Typically the quickest way is via the usual alphabet and symbols, and so game creators have always needed to create some fonts.

Generally speaking 2D games store their pixel resources in tiles, square chunks of imagery that are placed as required on-screen by the program. Fonts are stored the same way, and for historical and technical reasons, they're usually kept in 8 x 8 pixel tiles.

That isn't a lot, really. Sixty four measly pixels within which to illustrate every letter, number and symbol that a game might require, not to mention that one of those columns should be left empty so there's a space between each character.



And these fonts were important. From the boot-up messages in *Sinistar*

**INITIAL TESTS INDICATE**

**ALL SYSTEMS GO**

to the *gimme money* message in *Gyruss*.

**PLEASE DEPOSIT COIN  
AND TRY THIS GAME**

A good font required skill to create. It shouldn't require time to decipher. There's one default arcade font which is perfectly legible, and can be found in games from nearly every manufacturer. It might have come from Namco originally, or maybe Atari, or maybe not, it burst into existence and became the de-facto standard in the primordial ooze of the earliest arcade games, until the last.

**THE ARCADE FONT!**

background: Ms. Pac Man test screen

This 'arcade font' became the starting point for a lot of developers. Sometimes they tweaked a few pixels, sometimes they added colour, many of them added a shadow in the gap pixel. Irem's *Major Title* did all three:

**MAJOR TITLE**

Nearly every arcade font uses a shadow, for those instances when a font doesn't stand out against the changing backgrounds. The gradient helps too, giving text an extra dose of vibrancy, and helping it maintain visibility. *Ninja Gaiden* didn't stray far from the default, but uses every technique to really pop.

**NINJA GAIDEN**

Most games used only upper case characters. When lower case letters were used, the results were mixed. The Roman alphabet uses decenders for many lower case letters, and eight vertical pixels can start to look very restrictive.

Capcom were big on lower case characters. Almost every game on their Power System 2 (CPS2) hardware used a similar font.

**Super  
Street Fighter II**

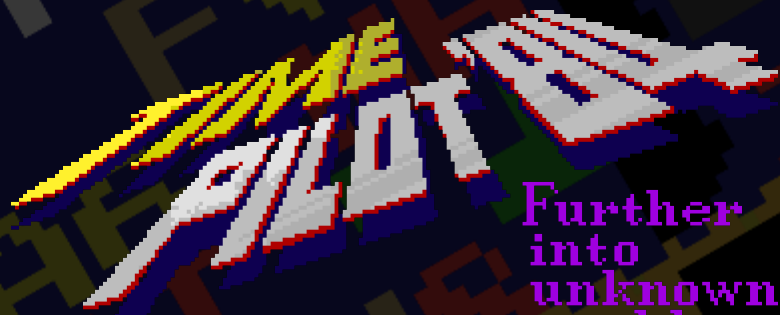
But notice how their rigid adherence to a consistent character height compromised some letters, like the lower case E. They fixed this in later games on the same hardware, but sometimes when they created new fonts, like the one used in *Mars Matrix*, the result was messy. The word 'case' seems to indicate they were not being especially careful.

**MARS MATRIX  
Lower case**

Many games managed the feat, however. Interestingly, the thicker fonts seemed to do it well every time.

**Solomon's Key  
Super Mario Bros 3  
Street Fighter  
Alpha 3  
Image Fight  
Panic Bomber**





Further  
into  
unknown  
world.

## SCORE RANKING TABLE

1ST	20000	GSX
2ND	17500	XJS
3RD	15000	CBR
4TH	12500	RGB
5TH	10000	CRT

Like any alphabet there's a generally accepted shape we can quickly parse, and designers had to stick to it.

Italic fonts were uncommon. Where lower case was a matter of putting smaller things in the 64-pixel box, italic characters required more space than normal ones. When done effectively italic text looked very, very good, but this was an elusive goal for most developers.

All of the features of normal fonts caused trouble in italics. Pixels were at a premium, and tough decisions had to be made.

**KING OF FIGHTERS**  
**KING OF FIGHTERS**

In *The King of Fighters '97* both normal and italicized fonts were used. The compromises are easy to spot: the brighter edges are gone, as the font is necessarily thinner. In this case the shadow was preserved, but the cost is uniformity. Some letters are thicker than others, like the F and I in Fighters. Others are awkward, like the T, and the letter E seems a little bit curved.

But when it worked, it was totally worth it.

**SPEED RUMBLER**

**GONDOMANIA**

**NINJA SPIRIT**

**dynamite dux**

**K L A X**

Surprisingly a lot of developers made fonts smaller than they needed to, as if 64 pixels was a wasteful extravagance.

In 1982 *Robotron* used a very tiny font for the densely packed bookkeeping screen. Each letter was a miniscule 3 x 5 pixels. Some were necessarily wider, like M and W, but the majority were very tiny indeed. These are probably the smallest legible characters possible.

**WILLIAMS ROBOTRON**

USE -MOVE- TO SELECT ADJUSTMENT  
USE -FIRE- LEVER TO CHANGE THE VALUE

**PRESS ADVANCE TO EXIT**

Also unusually Williams used a variable width for each character, so that thinner letters took less space, significantly increasing legibility. Almost every other game used a fixed width, no matter the character size.

Smaller fonts often allowed the use of a surrounding outline.

**FANTASY ZONE**

SNK created a very successful slab-faced small font for *The King of Fighters 2001*, a mere five pixels high (seven with outline).

**KING OF FIGHTERS**

Even at that size, Taito managed some extra style and a pretty gradient for the *Ray Force* font.

**RAY FORCE**

Some fonts were squashed on one axis but not the other, like the squashed *Nebulas Ray*, or *Last Blade* - one of the only fonts with narrow, tall characters.

**NEBULAS RAY**

**LAST BLADE 2**

**SKY SOLDIERS**

**OUTFOXIES**

**HAT TRICK HERO**

RAM CHECK OK

ROM CHECK OK

SOUND CHECK OK

Colour gradients were a big part of arcade fonts. They made a font look more dynamic, and on a black screen filled with a colourful miasma they could still stand out.

A vertical gradient was the most common. Some games were so satisfied with this technique that they didn't use any other, like Truxton's startup text, above.

There are many different gradient styles. *Aurail* and *Snow Bros.* used a half-gradiated style a little suggestive of a horizon reflected in chrome.

AURAIL  
SNOW BROS

A handful of games went for an echoing vertical gradient, like Taito's *Flying Shark* and Capcom's *Willow*.

FLYING SHARK  
WILLOW

Not all gradients were vertical. Horizontal ones were used, though rarely.

MONSTER HAULER  
LAST RESORT

But the second most common gradient is diagonal. A lot of games did this, with a surprising amount of variety. Most went for a simple gradient

Battle Bakraid  
GYRUSS  
Panic Bomber

while a few managed to pack an echoing diagonal effect into those few pixels.

SAMURAI SHODOWN 2  
BATSUGUN

Probably as a result of their Japanese origins, a lot of games went for a calligraphic brush script. This is particularly impressive considering the 64 pixel box they were forced to work with.

Ninja Masters  
SHYNOBI  
SAMURAI SHODOWN 3  
SHADOW DANCER

Some games attempted to capture a medieval feel, but these fonts almost always created some harsh results. Variable height lower-case letters were the worst offenses, but letters would often appear to lean at different angles.

Arabian Magic  
Light Bringer

One of my favourite styles is a thick, rounded-character font. It was a popular style, allowing the existing 64-pixel space to be almost fully utilized, and with careful use of lower case they rarely failed to look good.

AERO FIGHTERS  
COTTON  
PARODIUS  
BUBBLE SYMPHONY

Game developers loved their stencil fonts. They're common, and relatively easy to draw: take an existing font and cut a vertical line out of the middle of it.

1943  
Ketsui  
UN SQUADRON

And of course, given the forward-looking nature of a lot of games, futuristic fonts are plentiful as well.

PULSCAR  
BLAZING STAR  
LAST DUEL

Other futuristic fonts were very common too. Or at least, they seemed futuristic in the 1950s when they were created, but are now sort of a retro-future generalized 'computer' font.

CYBATTLER  
MUTANT NIGHT  
DANGEROUS SEED

Thin fonts are particularly well suited to the 64-pixel grid. By not making all the character components thick there's more room for shadows and other embellishments.

FINAL STAR FORCE  
GRADIUS 3  
GUNBUSTER  
Puzzle Bobble  
R TYPE

The creativity of game designers did not seem to know any bounds. Much like the games themselves, the quality and effectiveness of their fonts was wildly varied.

A lot of boundaries were pushed. At least one developer, the decidedly quirky UPL, created a font that had a real 3D effect in 64 pixels.

ARK AREA

But not every font was created to be effective. Indeed some, like *Bubble Memories* from Taito, had fonts that were not designed to be read at all. This font was used when monsters spoke. If you squint, you can sort of see how each letter is based off the Roman alphabet. Loosely.

BOBBIA WAWOR/AS

There were a lot of non-Roman alphabet symbols found in arcade fonts, if you knew where to look. Japanese characters were very common, though usually required larger grids because of their complexity.

あはよーご" き" ひまーす

More often though the developers stuffed some fun things into the unused corners. Astrological gender symbols, critters, little icons of player ships, and especially hearts were common.



Sometimes the developers would try to cram unusually sized text into the fonts as well, like company logos, and in *R-Type*, the charge beam text which was 50% larger than the normal game font.

@SEGA WESTONE  
KONAMI BEAM

Then there's this, from Namco's tank blaster, *Assault*:

Dr. of ♥ ♀

The most common not-quite-alphabet character was ED, for END, used when a player had finished entering his initials on the high score screen.

E0 E0 E0 E0 E0 E0 E0 E0 E0 E0

Ultimately, the best indicator of a font's quality is its exclamation mark. In the best fonts it'll be slightly tilted, a jaunty tip o' the hat towards the player, a smile, a wink, and see you next time.

PIXELS! ARE!  
AWESOME!

And some games decided that 64 pixels wasn't enough, but that's a story for another day.

64  
BIT  
BIG  
FONT  
FONT