

## SPRITES QUESTIONS AND ANSWERS

STOS sprites can certainly be a pain sometimes. This article aims to make using them a little easier to understand.

The default sprites in STOS are software sprites, meaning that STOS has to do a lot of work with them which makes them slow and flicker a lot. It spends a fair bit of processor time updating them, and with them working on interrupt also adds to problems.

Here are a few typical questions about them along with answers...

QUESTION: The command `sprite 16,100,120,4` produces an error.

ANSWER: This is because STOS only allows up to 15 sprites on the screen at the same time. A higher value will produce errors.

QUESTION: The sprite flickers when it moves.

ANSWER: This is because of the monitor picture tube updating causing the sprite to flicker when it passes it. Use the `screen swap` command to avoid this.

QUESTION: Can I get the sprites moving more smoothly?

ANSWER: Yes, STOS updates the sprites every 50th of a second. This can lead to problems with speed and movement so you're best of using the `update off` command and updating them yourself with the update command like this....

```
10 key off : hide : update off
```

```
20 sprite 1,X,Y,4 : update
```

QUESTION: The more sprites I use, the slower they get.

ANSWER: Again this is due to STOS using a lot of time to update them all, try using fewer sprites on the screen at the same time. For a shoot em up game, you could have about five sprites on screen at any one time and replace each one as it gets killed.

QUESTION: Large sprites are difficult to handle.

ANSWER: Yes they are...the bigger the sprite, the more time STOS uses to update them. If you must have large sprites then use as few as possible. About two or three on-screen at the same time.

QUESTION: The sprite flashes on the screen.

ANSWER: This is because it has colour 2 in it, STOS always flashes this colour. Use the "flash off" command.

QUESTION: If I place the sprite on a picture, the colours of the sprites are different to what they were.

ANSWER: Pictures and sprites have their own separate palettes. When you load a picture to the screen or unpack one from a bank STOS adjusts its palette to one of the screens so the sprite gets the same palette. Load your sprites back into the 'Sprite Definer', grab the palette from your background picture and re-colour the sprites with the colours of the pictures.

QUESTION: If I place a sprite on the screen, its colours change.

ANSWER: Again this is due to the sprite and the screen having two different palettes. Unlike pictures STOS doesn't adjust his palette to one of the sprites, you have to do it yourself like this...

```
10 key off : mode 0 : flash off
```

```
20 XP=hunt(start(1) to start(1)+length(1),"PALT")
```

```
30 XP=XP+4 : for I=0 to 15 : colour I,deek(I*2+XP) : next I
```

QUESTION: The sprite hasn't appeared on the screen.

ANSWER: There are two ways this can happen.

1. The image number you used is a blank space in the sprite bank, so STOS displays a blank space.

2. You've given the X and Y parameters a negative value, IE: you've typed 'sprite 1,-50,-100,4', putting it off the screen.

QUESTION: Can I display sprites in medium resolution?

ANSWER: Yes, define them with the 'Sprite2' accessory.

QUESTION: How can I animate about 20 images, ANIM won't do it.

ANSWER: The "anim" command only stores about 10 to 15 images at a time. You'll have to animate them yourself like this.

```
10 key off : flash off : mode 0
```

```
20 for X=1 to 20
```

```
30 sprite 1,100,100,X : wait 20
```

```
40 next X
```

The 'wait' command controls the speed of the animation.

QUESTION: How do I control a sprite using the joystick.

ANSWER: Don't use the move command for this, it doesn't stop when you want it to. Instead, use this routine...

```
10 key off : mode 0
```

```
20 if jleft then X=X-2
```

```
30 if jright then X=X+2
```

```
40 if jup then Y=Y-2
```

```
50 if jdown then Y=Y+2
```

```
60 sprite 1,X,Y,1 : wait vbl
```

```
70 goto 20
```

QUESTION: Why can't I move the sprite against a scrolling background?

ANSWER: Because STOS updates scrolling quicker than it updates sprites causing them to jerk. The best thing to do is use the "bob" and 'world' commands from the Missing Link extension.

Well, that's it for this article. I hope it's been useful. Most STOS coders use pre-shifted sprites these days but if you are just learning then I'm sure you'll find this article useful.