

Graphics in MCM and ABC

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version 1.0 – January 2022

To insert graphics in your MCM or ABC file, you need to have control of their coordinates. The right way is to have an anchor and to give the dimensions of the graphic to the program. This is correctly done by an external EPS file or by a specific decoration.

1. Insert an EPS file in your MCM or ABC file

With PostScript, it is easy to include some graphic inside the page. You need 2 different files:

1. the MCM or ABC file
2. the graphic as a EPS file.

In the MCM or ABC file, you insert the graphic anywhere you want by:

```
%%EPS myGraphic.eps
```

The EPS file contains:

- a header including the size of the graphic (%%BoundingBox) and
- the PostScript code that draws the graphic.

Example:

```
%!PS-Adobe-3.0 EPSF-3.0
%%BoundingBox: 72 72 216 216
72 72 moveto
216 72 lineto
216 216 lineto
72 216 lineto
closepath
fill
/Times-Roman findfont 36 scalefont setfont
1 setgray
90 100 moveto
(MCM !) show
```

- a. save this code (via a simple text editor as Notepad++ or Geany) as myGraphic.eps
- b. put myGraphic.eps in the same directory as MCMusiceditor(-Lite).exe
- c. insert the EPS file in your MCM or ABC file by

```
%%EPS myGraphic.eps
```



You can define its position with default format commands, e.g. page format directives like `%%leftmargin` and separation directives like `%%vskip`.

1.1 How to make an EPS file?

Of course you can make an EPS-file from your Postscript code, only having to calculate the Boundingbox (which can be tricky). To avoid manual calculating, you can use the `ps2eps` command line tool. Another option is to make your graphic file with Inkscape (WYSIWYG). Having a good quality image, you can convert it to EPS, e.g. with the online service of www.online-convert.com/

2. Anchor some graphic by a specific decoration

Hudson Lacerda gives excellent tutorial on creating new symbols in `abcm2ps` via the `%%deco` command. This text can be found in the `MCMfmt` folder of `MCMusiceditor(-Lite)`.

Seven types of decorations can be discerned:

- 0: close to the note head, like `!tenuto!` or `.` (staccato);
- 2: on the left of a note head, like `!slide!`;
- 2: on the left of a chord, like `!arpeggio!`;
- 3, 4: generic expressions above and below the staff;
- 5: long symbol above the staff, like `!trill(! or !trill)!`;
- 6: generic (usually below the staff);
- 7: long symbol below the staff, like `!crescendo(! or !crescendo)!`

To demonstrate, a type 4 and type 3 example.

```
%type 4, arrow up below the staff
%%postscript /arrowUp { %below the staff
%%postscript moveto -3 3 rmoveto
%%postscript gsave
%%postscript 6 0 rlineto
%%postscript -3 6 rlineto
%%postscript closepath fill
%%postscript grestore
%%postscript 3 0 rmoveto 0 -10 rlineto stroke
%%postscript } def
```

```
%%deco arrUp 4 arrowUp 20 0 0
```

```
X:1
```

```
L:mcm_default
```

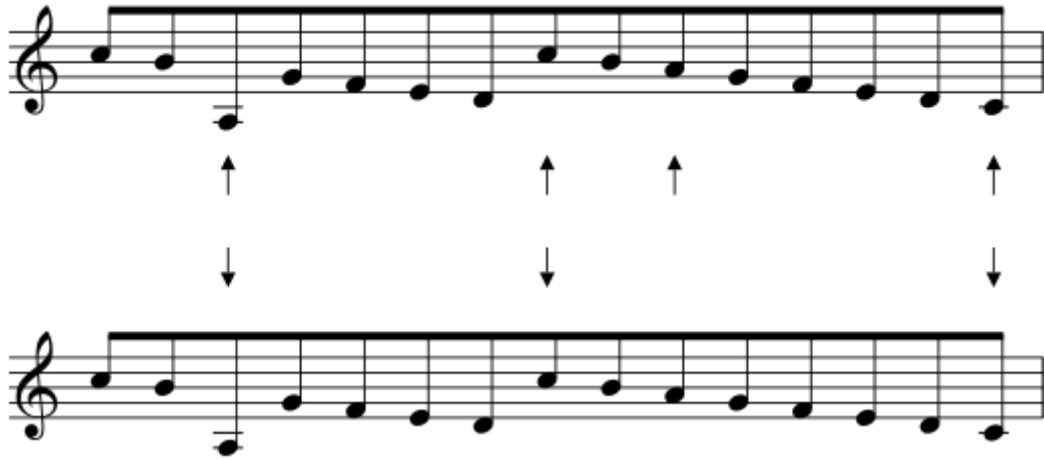
```
K:C clef=treble
```

```
c8B8!arrUp!A,8G8F8E8D8!arrUp!c8B8!arrUp!A8G8F8E8D8!arrUp!C8 |
```

```
%type 3, arrow down above the staff
%%postscript /arrowDown { %above the staff
%%postscript moveto -3 20 rmoveto
%%postscript gsave
%%postscript 6 0 rlineto
%%postscript -3 -6 rlineto
%%postscript closepath fill
%%postscript grestore
%%postscript 3 0 rmoveto 0 10 rlineto stroke
%%postscript } def
```

```
%%deco arrDn 3 arrowDown 20 0 0
```

```
X:1
K:C clef=treble
c8B8!arrDn!A,8G8F8E8D8!arrDn!c8B8A8G8F8E8D8!arrDn!C8 |
```



The next code is a type 5 example:

```
%%postscript /u_arrow_right {
%%postscript moveto -3 3 rmoveto
%%postscript gsave
%%postscript 2 6 rmoveto
%%postscript 0 10 rlineto
%%postscript 12 add 0 rlineto
%%postscript currentpoint stroke
%%postscript moveto
%%postscript -7 -3 rlineto
%%postscript 7 3 rlineto
%%postscript -7 3 rlineto
%%postscript stroke
%%postscript grestore
%%postscript } def
```

```
deco u_arr_r( 5 - 10 0 0
deco u_arr_r) 5 u_arrow_right 20 0 0
```

```
X:1
L:mcm_default
K:C
c8d8e8f8g8a8b8!u_arr_r(!c8d8e8f8g8a8!u_arr_r)!b8c'8d8 |]
```



Look at the menu Templates, subitem Graphical annotations in MCMusiceditor(-Lite), where all implemented symbols are listed. Their postscript code is provided in the MCMfmt folder of MCMusiceditor(-Lite).