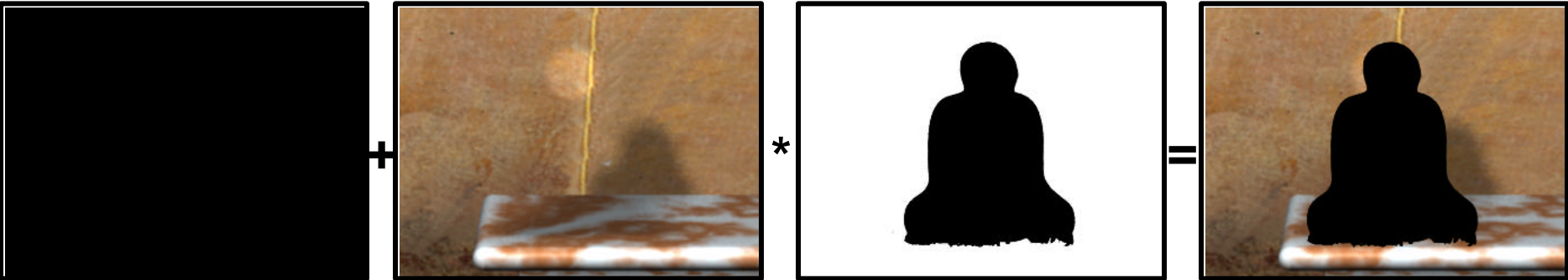


Composing Two Elements



Background

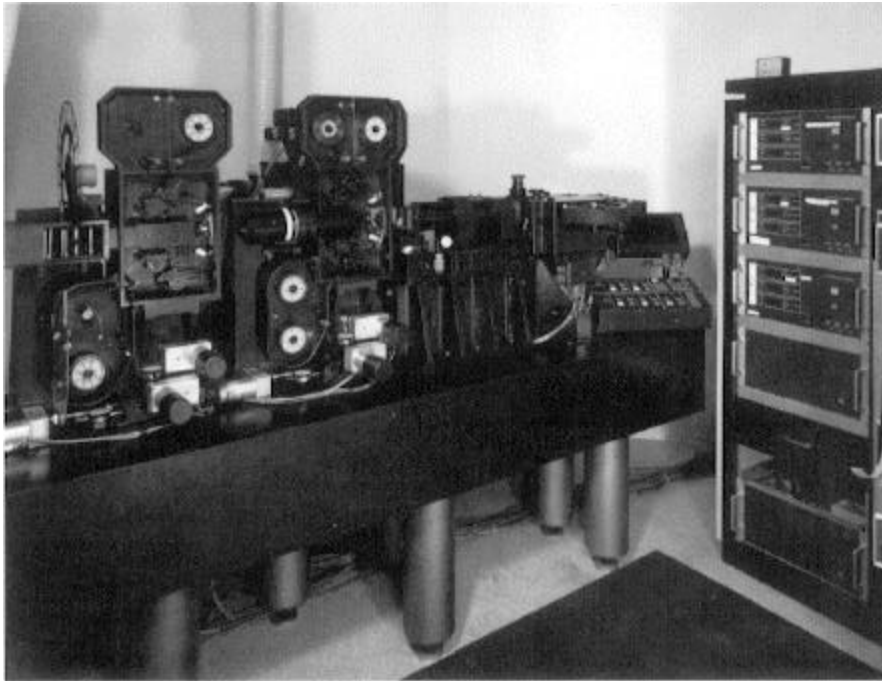
Holdout Matte



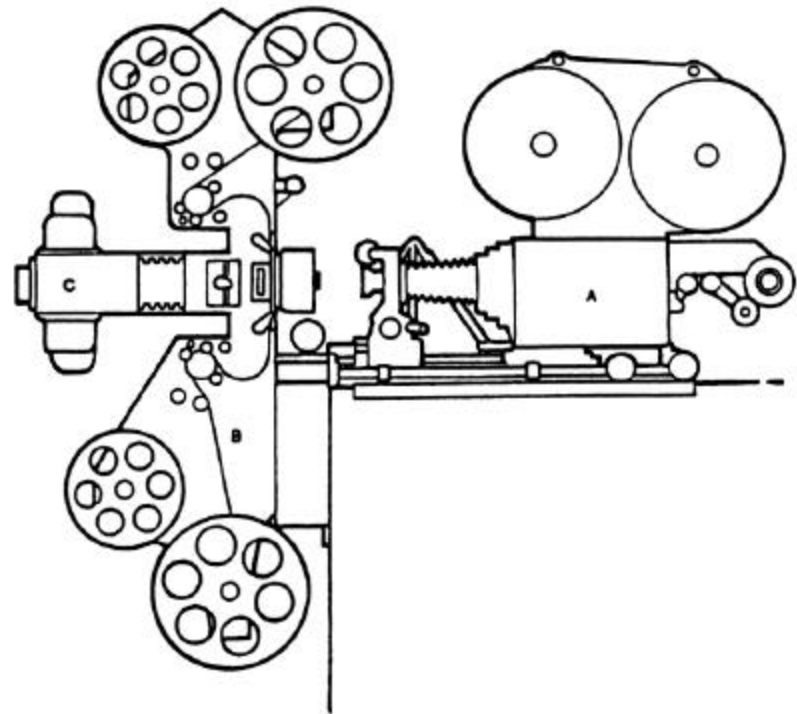
Foreground

Traveling Matte

Optical Printing with Mattes



From: "Industrial Light and Magic,"
Thomas Smith (p. 181)

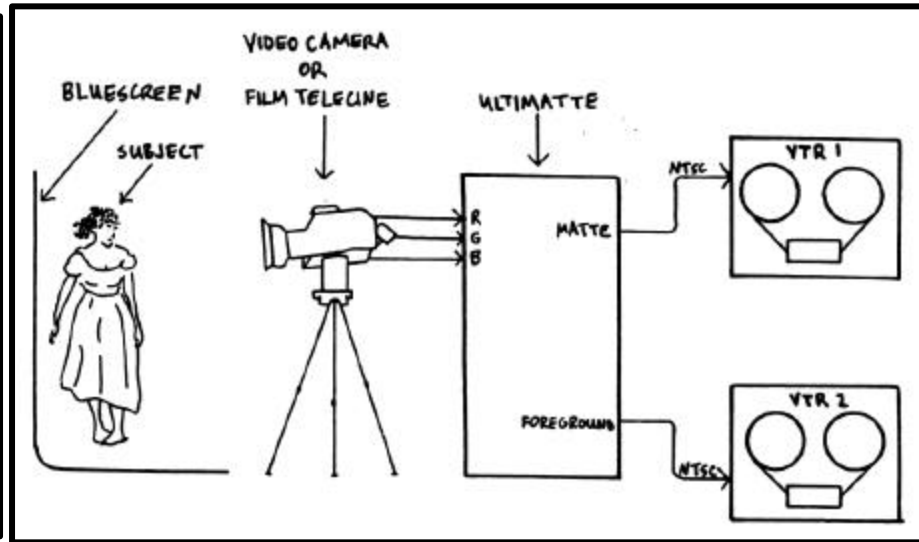


From: "Special Optical Effects,"
Zoran Perisic

“Pulling a Matte” - Matte Creation

- **From digitized images**
 - **Blue-screen matting (Petro Vlahos)**
 - ✍ Separate blue background from foreground image
 - **Video or chroma-keying**
 - ✍ Range of chromaticities marked transparent
 - **Image processing**
 - ✍ Set of colors marked transparent, region growing ...
- **From computer generated images**
 - **Coverage**
 - **Transparency**

Pulling a Matte Using Blue Screening



Porter-Duff Compositing Algebra

Operation	F_A	F_B
Clear	0	0
A	1	0
B	0	1
A over B	1	$1 - ?_A$
B over A	$1 - ?_B$	1
A in B	$?_B$	0
B in A	0	$?_A$
A out B	$1 - ?_B$	0
B out A	0	$1 - ?_A$
A atop B	$?_B$	$1 - ?_A$
B atop A	$1 - ?_B$	$?_A$
A xor B	$1 - ?_B$	$1 - ?_A$

$$C' = F_A C'_A + F_B C'_B$$

OpenGL blendfunction
Specify src and dst F's

0, 1,
As, Ad, 1-As, 1-Ad,
min(As, 1-Ad),
Cs, Cd, 1-Cs, 1-Cd,

Painting – how are each of these strokes done?

