

An Introduction to Super-8mm Film



Imperfect Cine Club



An Introduction to Super-8mm

Part 1

Motion Picture Film

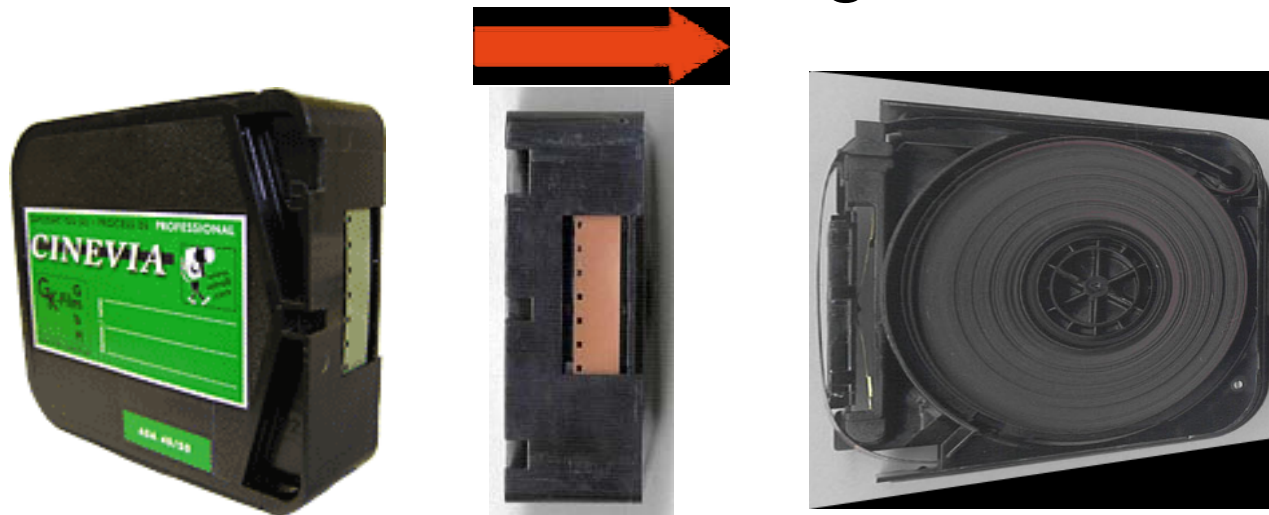
Motion Picture Film

- Motion Picture Film is very similar to the film that is used in traditional 35mm stills cameras and comes in a variety of sizes, formats and emulsion types.



Motion Picture Film

- Super 8 Motion Picture Film comes in 50ft 'rolls' which are contained in small plastic cartridges. During filming the film passes from the right hand 'label side' to the left 'socket' side of the cartridge.



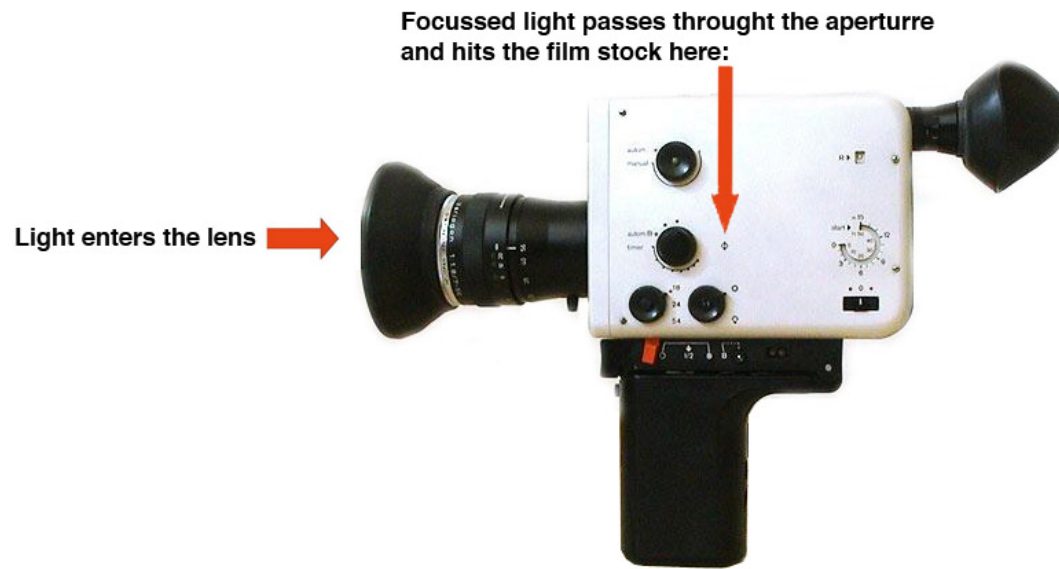
Motion Picture Film

- Whereas a stills camera exposes a single frame in order to produce a photographic image, a movie camera must expose multiple frames to create the illusion of movement
- The standard frame exposure rate for capturing 'realistic' movement with a movie camera is 24 frames per second (or 18fps for Super8)



Motion Picture Film

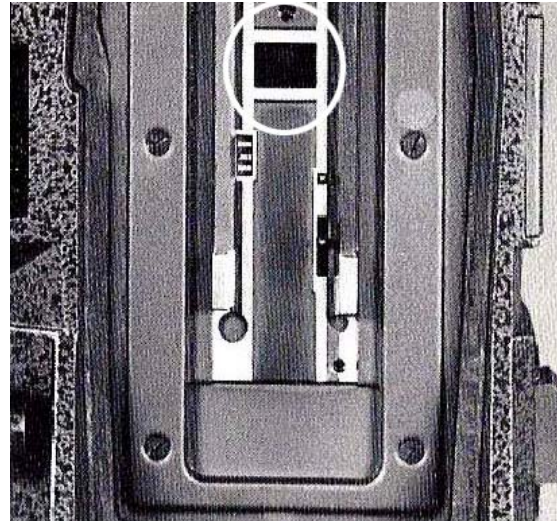
- Light enters the lens of the camera, and is sequentially focussed onto each individual frame of film.



Motion Picture Film

- Each frame is exposed individually by a mechanical shutter (which is positioned in the aperture behind the lens of the film camera).

Focussed light passes through the aperture and hits the film stock here:



Motion Picture Film

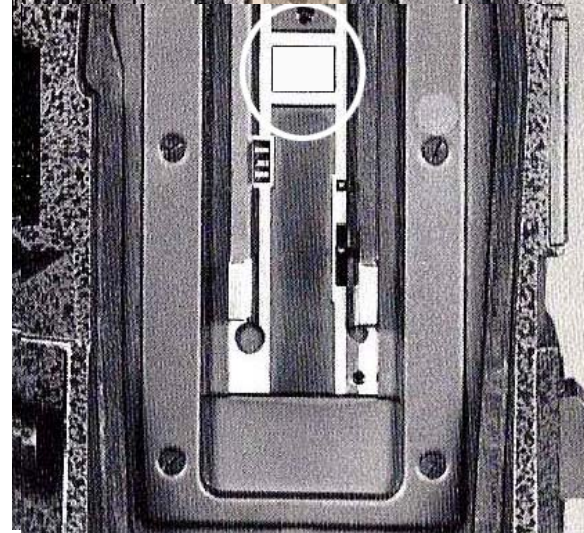
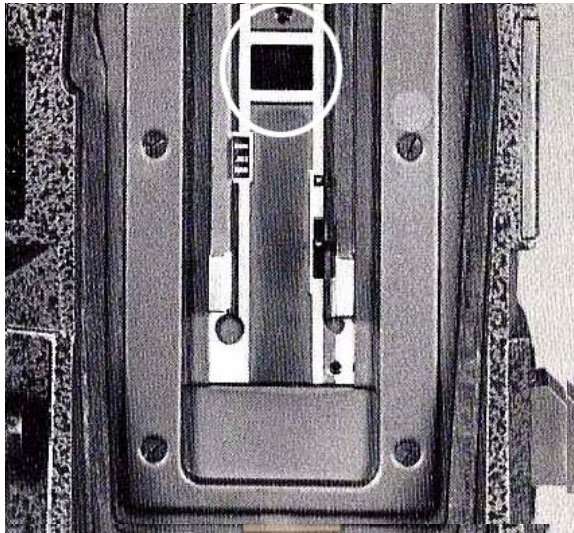
- The camera opens the shutter so that each individual frame can be exposed to light entering the lens, then closes the shutter.

OPEN

CLOSED

(LIGHT HITS FILM STOCK)

(FILM FRAME ADVANCED)



Motion Picture Film

- The camera opens the shutter so that each individual frame can be exposed to light entering the lens, then closes the shutter.
- The film is then advanced to the next frame and the sequence is repeated (18fps)

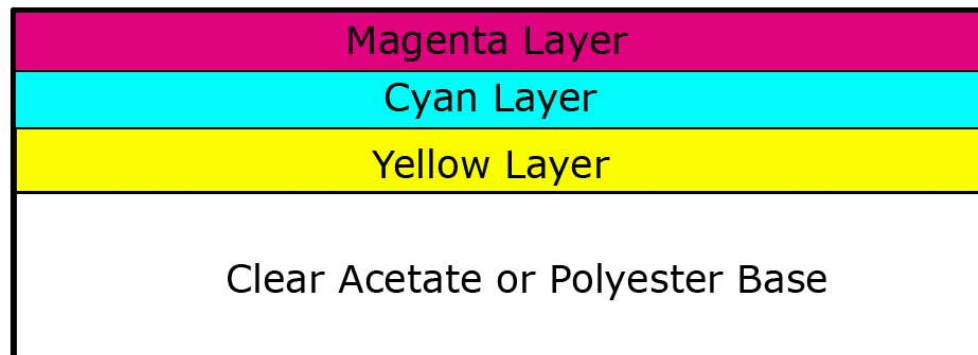


Motion Picture Film

OK, so how does colour film work?

Colour Film is comprised of a number of layers:

Cross Section of Film Stock



Light-Sensitive Emulsion Layer

(Comprised of 3 separate layers of light-sensitive silver halides suspended in gelatine).

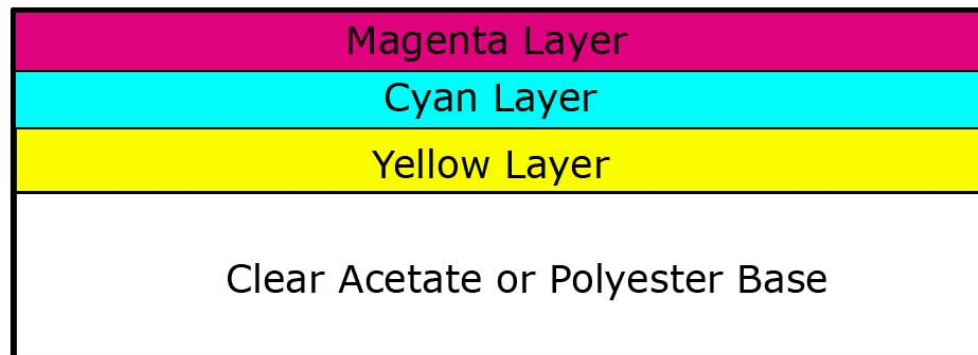
Motion Picture Film

Each layer is sensitive to a particular frequency of light:

Magenta / Cyan / Yellow

These layers combine to present a full colour image

Cross Section of Film Stock



Light-Sensitive Emulsion Layer

(Comprised of 3 separate layers of light-sensitive silver halides suspended in gelatine).

Motion Picture Film Gauges

- **Motion picture film comes in a variety of sizes known as ‘gauges’**



- ***Film gauges* are defined by the width of the film stock in millimetres (e.g. 35mm / 16mm).**

Motion Picture Film Gauges

- **65mm** (for epic feature films)



- **35mm** (for feature films)



- **16mm** (for feature films & documentaries)



- **8mm** (for home movies & indies etc)



Motion Picture Film Gauges

- At this Imperfect Cine Club we are going to be concentrating on the 8mm gauge
- More specifically a 8mm film format known as 'Super 8mm
- This is often referred to as 'Super8'

Super 8mm?

- *Super8* is a 4:3 film format:



- ***Super8mm Single Perforated***

The aspect ratio of this format is 4:3

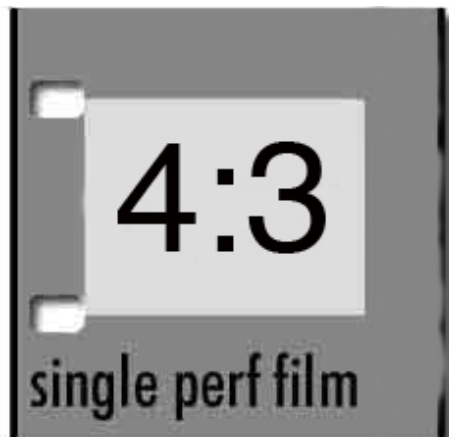
This format has sprocket holes on the left hand side of the 4:3 8mm frame

The right hand side sometimes contains a magnetic stripe for recording a soundtrack .

This format was developed for consumer and low-budget film-making and originally offered the recording of a soundtrack via a magnetic 'stripe' This sound recording format is now redundant as separate source digital sound recording has become the norm.

Super 8mm?

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Super 8mm?

- We will be using the *Super8* film format



- And a Braun *Nizo* Super8 Camera!



An Introduction to Super-8mm

Part 2

The Super8 Work Flow

The Super-8 Workflow

The Basics



- 1) Shoot on Film.
- 2) Process film in chemical solution to reveal its images.
- 3) Convert film (cine) images to video (tele) images using a telecine transfer machine or projector & camera.
- 4) Edit digital video files on a computer.
- 5) Screen the film!



An Introduction to Super-8mm

Part 3

Types of Film Stocks

Film Stocks

- **Film stocks can be easily separated into a number of different categories:**
 1. Negative or Reversal
 2. Daylight or Tungsten
 3. Fast or Slow Stocks (ISO)

Film Stocks

Let's Start by Looking at No.1 on the list:

Negative & Reversal Film Stocks

Film Stocks

Negative Film Stocks



- When a negative film stock is developed it reveals a *Negative Image*.
- This is useful because any number of positive image prints can then be produced from this master negative for editing & screening purposes.

Negative Film is the Professional / Industry Standard for large gauge cinematography.

Film Stocks

Reversal Film Stocks



- When a Reversal Film Stock is developed it reveals a *Positive Image*.
- This is useful for projecting straight away without the need to create a separate positive print.
- Reversal stocks are renowned for their high contrast capabilities.

Reversal film stock is the standard format for Super-8, although there are now many negative stocks available too.

Film Stocks

Negative & Reversal Film Stocks



***Neg Stock* = Negative
Image when developed**



**Reversal Stock = Positive
Image when developed**

Film Stocks

Negative & Reversal Film Stocks

In this session we'll be using **Kodak Ektachrome** which is a 'Reversal' super-8 colour film stock.



**Reversal Stock = Positive
Image when developed**

Film Stocks

Daylight & Tungsten Balanced Stocks

Colour temperature is measured in units referred to as '*Degrees Kelvin.*' You may have already encountered colour temperature settings when white-balancing a camcorder

 The *Tungsten* setting is usually calibrated at around 3,200K

 The *Daylight* setting is usually calibrated at around 5,500K

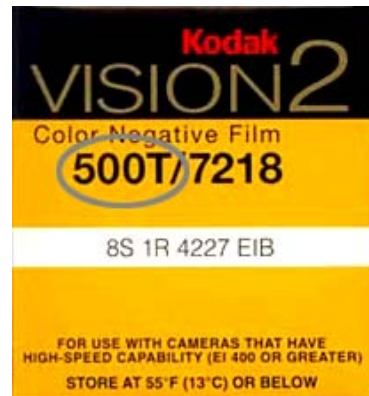
So why don't motion-picture cameras have a white balance function?

Well, in a way they do as motion picture camera film stock comes in two different colour balanced varieties:

Film Stocks

Tungsten Balanced Stocks

Tungsten Stock is balanced at 3,200K, the correct colour temperature for accurately recording white under orangey tungsten lights.



This Stock can be easily identified by the letter 'T' which follows the ASA Rating of the film stock on the label.

Film Stocks

Daylight Balanced Stocks

Daylight Stock is balanced at 5,500K, the correct colour temperature for accurately recording white under blue-ish daylight.



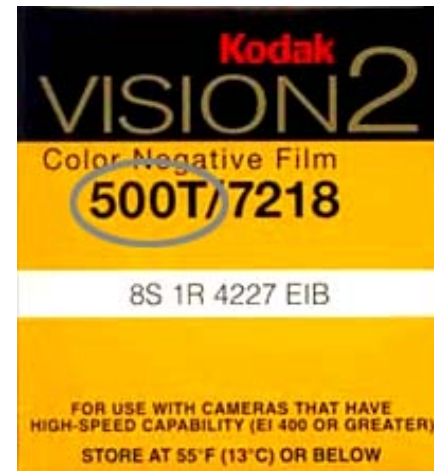
This Stock can be easily identified by the letter 'D' which follows the ASA Rating of the film stock on the label.

Film Stocks

Daylight & Tungsten Balanced Stocks



Daylight Balanced Stock
Identified by 'D' (250D)



Tungsten Balanced Stock
Identified by 'T' 500T

Film Stocks

Daylight & Tungsten Balanced Stocks

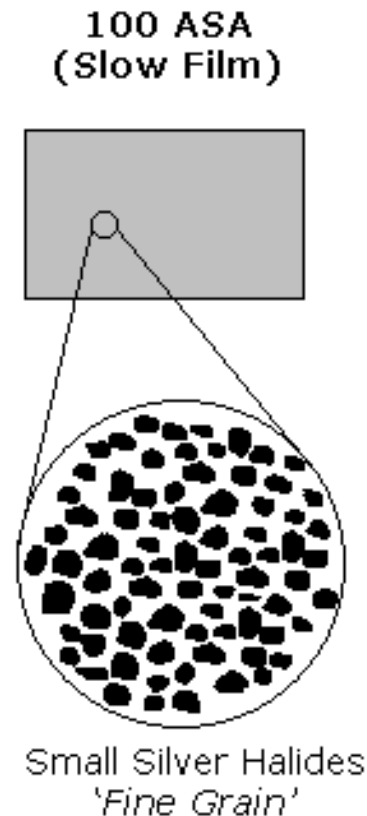
In this module we'll be using **Kodak Ektachrome 100'D** which is a 'Daylight Balanced' super-8 colour film stock



Film Speed (ISO / ASA)

- **Film speed (ISO / ASA) is the measure of a photographic film's sensitivity to light.**
- **As we know, the surface of film stock is covered with light sensitive silver halides suspended in a thin layer of gelatine**
- **The size of these silver halides (or *film grain*) determines how quickly the film stock reacts when exposed to light.**

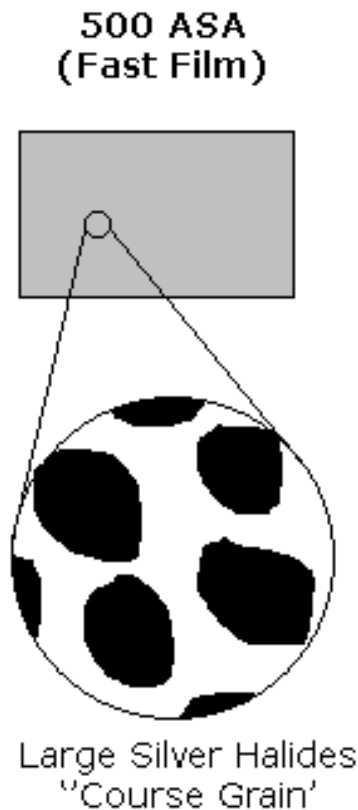
Film Speed (ISO / ASA)



Stock with lower sensitivity (lower ISO speed rating) has a fine (small) grain and so reacts more slowly to light (e.g. *Kodak Vision 100T*).

This stock is known as 'slow' film and is good for shooting in very bright conditions.

Film Speed (ISO / ASA)

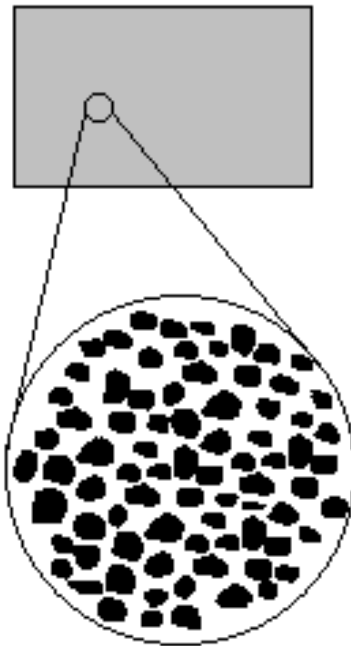


Stock with higher sensitivity (higher ISO speed rating) has a course (large) grain and so reacts very quickly to light. (e.g. *Kodak Vision 500T*)

This stock is known as '*fast*' film and is good for shooting in low light conditions.

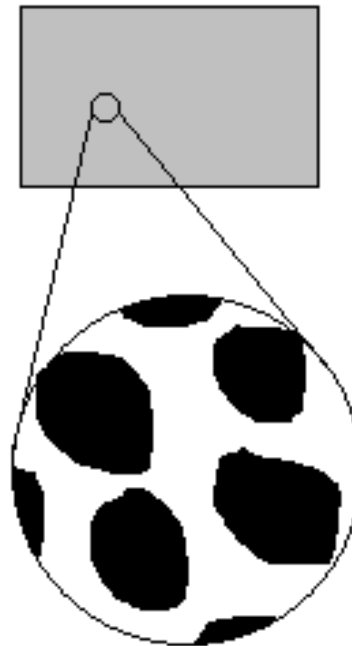
Film Speed (ISO / ASA)

100 ASA
(Slow Film)



Small Silver Halides
'Fine Grain'

500 ASA
(Fast Film)



Large Silver Halides
'Course Grain'

Film Speed (ISO / ASA)

In this session we'll be using **Kodak Ektachrome** '100D' T super-8 stock which is a 'slow' fine grain, tungsten balanced colour film stock, rated at 100 ASA



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