

DIGITAL PRODUCTION CHALLENGE II

Lisbon, 30 November – 3 December 2016



CARTAS DA GUERRA

Workflow, cinematography, color grading and photos

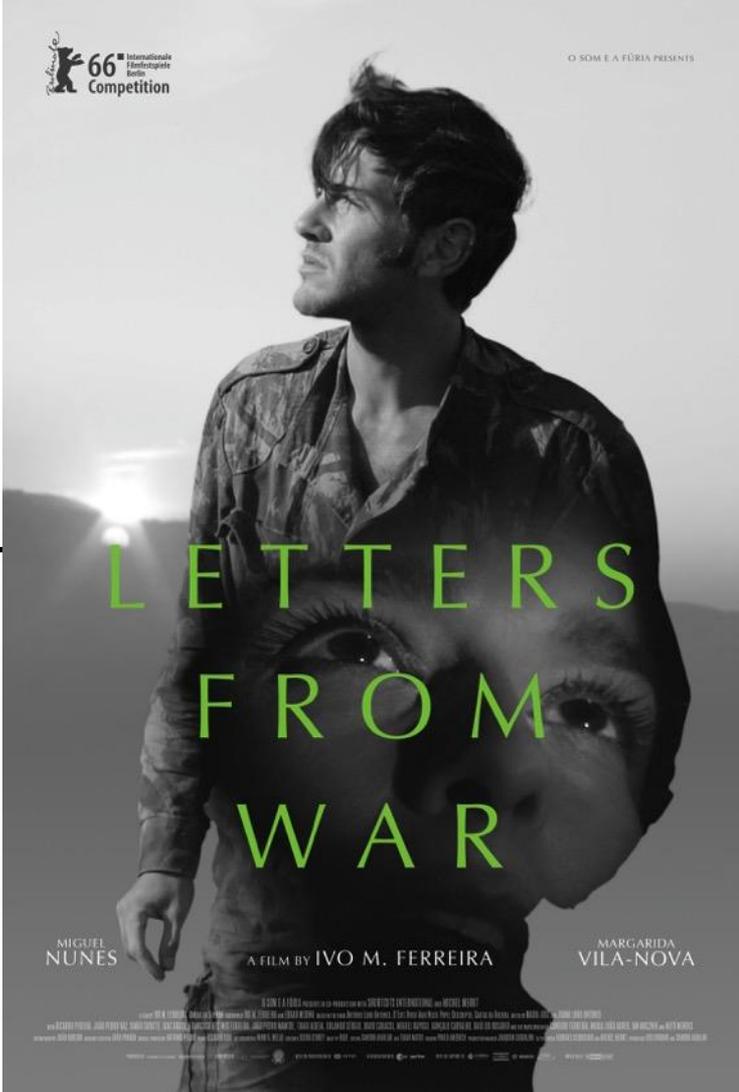
Production: O Som e a Fúria

Main Producer(s): Luis Urbano - Sandro Aguilar

Co-producers: Michel Merkt - Georges Schoucair

Director: Ivo M. Ferreira

Production manager: Joaquim Carvalho



LETTERS
FROM
WAR

MIGUEL
NUNES

A FILM BY IVO M. FERREIRA

MARGARIDA
VILA-NOVA

IL SOM E LA FÚRIA: PRODOTTO DA O SOM E A FÚRIA PRODUCTIONS E DA O SOM E A FÚRIA PRODUCTIONS. REGIA DI IVO M. FERREIRA. CASTING DI MICHEL MERKT. COSTUME DESIGNER SANDRO AGUILAR. COLLEZIONE DI SANDRO AGUILAR. FOTOGRAFIA DI SANDRO AGUILAR. MONTAGGI DI SANDRO AGUILAR. SONO IVO M. FERREIRA. MUSICA DI SANDRO AGUILAR. PRODOTTORE GENERALE SANDRO AGUILAR. PRODOTTORE ASSOCIATO SANDRO AGUILAR. DISTRIBUZIONE O SOM E A FÚRIA PRODUCTIONS. WWW.OSOMEAFURIA.COM

Cinematographer: João Ribeiro (AIP)

First AC: Ricardo Simões

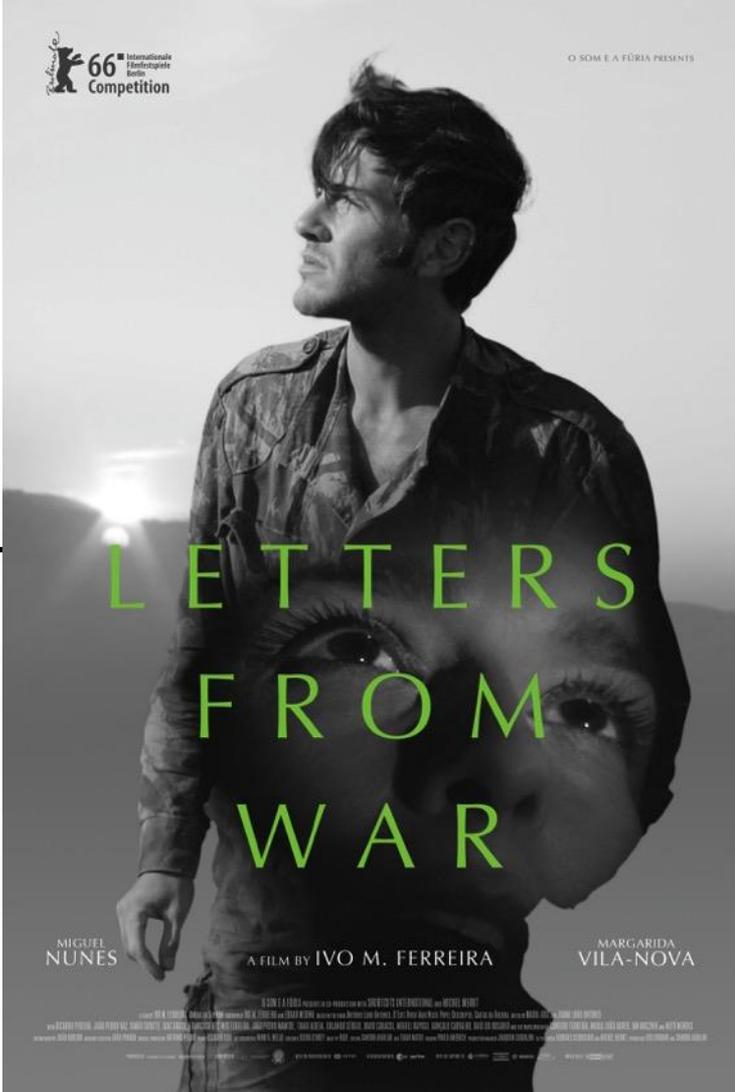
Editor: Sandro Aguilar

Set Designer: Nuno Mello

Colorist: Paulo Americo da Silva

VFX Supervisor: Eugenio Marques

Post-production adviser: Paulo Americo da Silva



LETTERS
FROM
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MIGUEL
NUNES

A FILM BY IVO M. FERREIRA

MARGARIDA
VILA-NOVA

3 Parts

Part 1: **Sandro Aguilar**

A pre-conceived workflow

Part 2: **João Ribeiro**

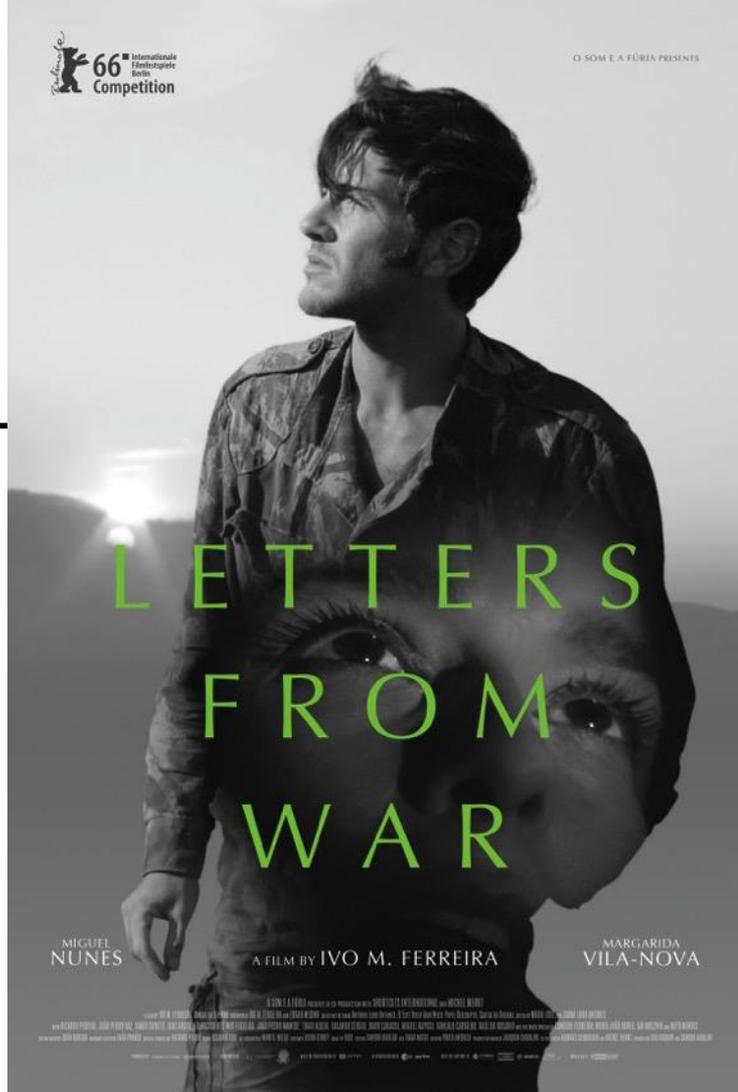
The cinematography of Cartas da Guerra

Part 3: **Paulo Americo** - Extract from his presentation

The point of view & tricks of a colorist

Part 4: **Joaquim Carvalho** presentation

Photos from the shooting



Part 1: Sandro Aguilar

A pre-conceived workflow

Production:

O SOM E A FÚRIA

Cost effective workflow tested on short films before using it on Cartas da Guerra.

Intensive use all the specificities of the DSLR camera and of the choice to turn to B & W.

SHOOT

FILM

Super 8



Super 16



35 mm



65 mm



Imax



SENSORS

Digital Still
Camera DSLR



Standard
Definition



High Definition



From EX-3 to CANON
C300 MKII, VARICAM 35
RED WEAPON, SONY
F65, ARRI ALEXA 65



Digital Cinema

POST-PRODUCTION

CHEMICAL



DIGITAL

Telecine

SD Standard
Definition

HD High
Definition

2K Scan

2K DI

4K Scan

4K DI

6K Scan

SCREENING

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



What is the final destination



35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



SHOOT

FILM

Super 8



Super 16



35 mm



65 mm



Imax



SENSORS

Digital Still
Camera DSLR



Alpha 7S

Standard
Definition



High Definition



From EX-3 to CANON
C300 MKII, VARICAM 35
RED WEAPON, SONY
F65, ARRI ALEXA 65



Digital Cinema

POST-PRODUCTION

CHEMICAL



DIGITAL

Telecine

SD Standard
Definition

HD High
Definition

2K Scan

2K DI

4K Scan

4K DI

6K Scan

SCREENING

35 mm - 70 mm



Film Projection

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Digital Projection

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Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



Workflow: Cartas da Guerra

Shoot



Angola

4 weeks



Portugal

4 weeks

Postproduction

BIKINI



Portugal

7 weeks

When the head of department are occupying different locations (some on-set, some off-set - in several countries at the same time, shown in the presentation by different colors) it lead to different strategies of workflows

VFX



Portugal

Production



Portugal

O SOM E A FÚRIA

Editing



Portugal

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD

Mobile



Distances between shooting locations and lab and editing room are changing the approach to design a workflow

Workflow: Cartas da Guerra

Shoot

Postproduction

Due to the fact that **Sandro Aguilar**, producer was also the editor who designed the workflow we can consider that these two locations: production & editing have the same color.

VFX

Production

O SOM E A FÚRIA

Editing

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



Shoot

Freq: **25p**
Spherical 1:1.85
extracted



Sony Alpha 7S

APS-C extraction
MP4 - H264 XAVC-S
HD 1920 x 1080
8-bit 4:2:0
Slog2 - SGamut



To achieve this unique
look the
cinematographer used
old Leica photo lenses

The APS-C extraction
helped to lower the
rolling shutter artefacts

O SOM E A FÚRIA

Editing



FCP X

Postproduction



Da Vinci 12

VFX

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



Workflow: Cartas da Guerra

Shoot

Freq: **25p**
Spherical 1:1.85
extracted



Sony Alpha 7S

APS-C extraction
MP4 - H264 XAVC-S
HD 1920 x 1080
8-bit 4:2:0
Slog2 - SGamut



Single Tiff image
Controlled and
pre-graded in
color on PS

QC

Quality Check
made on set by
D.I.T

Production

O SOM E A FÚRIA

Editing



FCP X

Postproduction

BIKINI



Da Vinci 12

VFX

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



Workflow: Cartas da Guerra

Shoot

Freq: 25p
Spherical 1:1.85
extracted



Sony Alpha 7S

APS-C extraction
MP4 - H264 XAVC-S
HD 1920 x 1080
8-bit 4:2:0
Slog2 - SGamut



Single Tiff image
Controlled and
pre-graded in
color on PS

1 Master + 1 Clone



Production

O SOM E A FÚRIA

Editing



FCP X

Postproduction

BIKINI



Da Vinci 12

VFX

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



Workflow: Cartas da Guerra

Shoot

Freq: 25p
Spherical 1:1.85
extracted



Sony Alpha 7S

APS-C extraction



Single Tiff

End of shooting

Slog2 - SGamut

pre-graded in
color on PS

1 Master + 1 Clone



Production



DVD PAL
For producers &
co-producers



Decision of turning
the film to B&W

media to be sent
to Fiber channel
RAID 50



FCP X

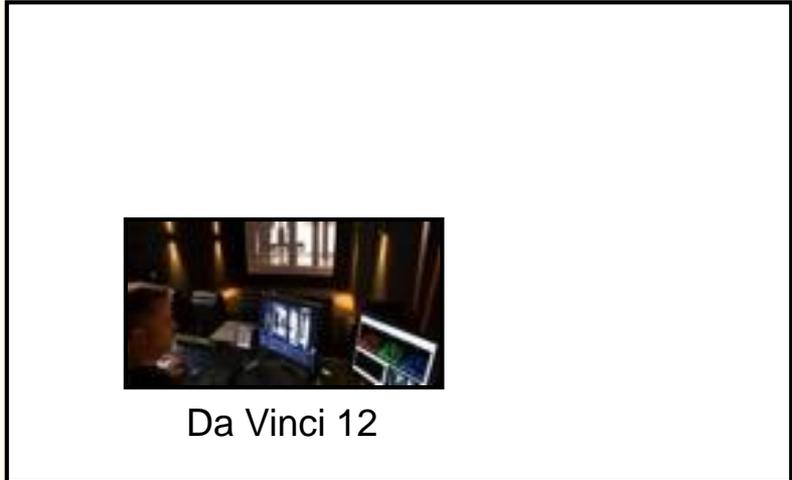
Back up

HDD for time
reasons

Postproduction

BIKINI

Fiber channel
RAID 50
HDD



Da Vinci 12

VFX

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



Workflow: Cartas da Guerra

Shoot

Freq: 25p

Spherical 1:1.85
extracted



Sony Alpha 7S

APS-C extraction
MP4 - H264 XAVC-S
HD 1920 x 1080
8-bit 4:2:0
Slog2 - SGamut



Single Tiff
image
Controlled and
pre-graded in
color on PS

QC

1 Master + 1 Clone



Production



O SOM E A FÚRIA



DVD PAL
For producers &
co-producers

Editing - Off line

Selection of
media to be sent
to Fiber channel
RAID 50

XML w/
metadata
and TC



FCP X

Back up

HDD for time
reasons

Postproduction

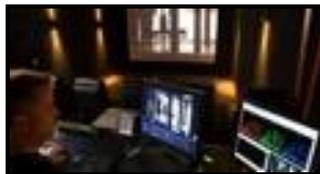
BIKINI

Fiber channel

RAID 50
HDD

Conform

Original
Files



Da Vinci 12

VFX

Color graded reference
+ Original footage

Titles

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



Digital Projection

SD - HD - UHD - 8K

Broadcast TV
DVD - Blu-Ray



INTERNET PROTOCOL

Internet - VOD
Mobile



OTHER SCREENINGS

360° - Hologram
3D - AR/VR
(Virtual Reality)



Workflow: Cartas da Guerra

Shoot

Freq: 25p

Spherical 1:1.85
extracted



Sony Alpha 7S

APS-C extraction
MP4 - H264 XAVC-S
HD 1920 x 1080
8-bit 4:2:0
Slog2 - SGamut



Single Tiff
image
Controlled and
pre-graded in
color on PS

QC

1 Master + 1 Clone



Production



DVD PAL
For producers &
co-producers



Editing - Off line

Selection of
media to be sent
to Fiber channel
RAID 50

XML w/
metadata
and TC



FCP X

Back up

HDD for time
reasons

Postproduction

BIKINI

Fiber channel
RAID 50
HDD

Conform

Original
Files

Grading



Da Vinci 12

FilmConvert OFX Plugin
for regain.
Grading on H264

Slog2 Sgamut.
Use of
Custom Gamma curve

Export in 1998 x 1080
TIFF 16-bit in Rec 709

VFX

Color graded reference
+ Original footage

Titles

Grading for TV 1 day

No Mapping in
Rec 709
Rescaling to
HD

BROADCAST
MASTER

DCP

Easy DCP Creator
Fraunhofer Institute

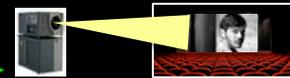
Legal Range

35 mm - 70 mm



Film Projection

SD - HD - 2K - 4K



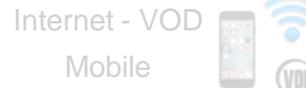
Digital Projection

SD - HD - UHD - 8K



Broadcast TV
DVD - Blu-Ray

INTERNET PROTOCOL



Internet - VOD
Mobile

OTHER SCREENINGS



360° - Hologram
3D - AR/VR
(Virtual Reality)

Part 2: João Ribeiro (AIP)

The cinematography of Cartas da Guerra



O SOM E A FÚRIA

João Ribeiro Cinematographer:

*“This painting is really important
When I film in Africa I like to see sea
paintings.*

*How the space is represented is quite
similar for me.*

*In this one we have a b&w sky, and a
colour sea.*

*It s a little bit "the process of our
film"....fade colours to b&w..."*



“After reading the script, and after a first approach to the director head, I build an album of visual influences (paintings, photographs, film stills). In Cartas da Guerra the album had:

PAINTINGS:

Romantic painting from the IXX, Francis Bacon, Goya, Constable...”



“PHOTOGRAPHS:

*Lorca Di Corcia,
Gregory Crewdson,
Edward Steichen (world war II
photos), etc etc.. “*



“FILM STILLS from:

Metropolis (Fritz Lang),

Letter never send (Kalatozov),

The cranes are flying (Kalatozov)

Spiritual voices: (Sokurov),

Bigger than life: (Nicholas Ray)

Black narcissus (Jack Cardiff)

The night of the hunter (Stanley Cortez)

Ivan´s childhood (Tarkovsky)

Lord of the flies (Peter Brook)

How green was my valley (John Ford)

Bully (Larry Clarck)”



“And:
Murnau,
Stroheim,
Griffith,
Jean Epstein,
Bresson (they are my main
influence).....

And:
Russell Metty in Douglas Sirk films,
and
Timo Salminen in Kaurismaki films
(this dop’s in **bold** are in a way my
heroes),
Also
Henri Alekan, specially on *La belle et
la bête*”



"I always imagine that this film could be understood with your eyes close , just listening to the sound, or with your ears close, just looking at the image





Miguel Nunes - Main actor

















“The concept for my crew was:

I never say: let’s make a shot

I always say: let’s create a shot”

Notes from **João Ribeiro**, Cinematographer - Nov 14, 2016:

...AND THE BLACK & WHITE

When we did the tiffs everyday we were colour correcting to monochromatic tones, sometimes we did black & white too, but it was not a shooting decision.

Also with the Sony you can't do black and white in the camera.

In the editing they try with all the material and it worked perfect.

If I would do something different if I knew it would be like that at the end?

My answer is no, I would do exactly the same light and framing.

I always "see in black and white", even the view finder is always set like that.

The reason is I do light with contrast, so it was not a problem.

Here the black & white helps to take away some African clichés like warm light, green, etc... etc..., obvious if you do colour in Africa you do not need always to do warm light, but filming Africa in colours you are always doing something that goes with the imaginary of the audience, how they imagine Africa...it's a continent full of clichés in peoples minds, so if you get away from that clichés you would feel too much aesthetic, maybe with no reason at all...maybe just to do different from other films, and that is a very stupid and irresponsible decision

The black & white gives you a distance, you are again in the field of representation and not filming "reality" itself, it brings some poetry to the images and a certain nostalgic thing, it works better with voice over too.

If we experience to put a good photograph colour film, and see it in black and white it's still good cinematography, it's obvious that colour must be worked in a dramatic way, but in black & white you are more depurated and you achieve what you want quicker...it's always how much black and white you want. In a pure black or in a pure white we are blind, you have to decide where you want to start to make people to see...in the blacks and in the whites...

Most of the films I see today, I notice that they light the space and put the actors inside, they have all freedom of movements. As I told before I think in a reverse way, first actors, then the space, maybe that's why people like the image of Cartas da Guerra, some say it looks like a classic, some say they are able to see colours, but for me the more important is that people feel the emotion and get touched by the film, the film itself, all the film, and not just the cinematography of it.

Notes from **João Ribeiro**, Cinematographer - Nov 14, 2016:

“The strong spirit from "Cartas da Guerra" film is a spirit that is "kind of lost" and I try always to recover when I work in featuresrespect for cinema and for each member of the crew

But in this case it was really specially!”

SONY ALPHA 7S customized by **João Ribeiro** - Cinematographer & **Ricardo Simões** - First AC



João Ribeiro:

"Camera: Sony A7s, (imposed by the production) it was the first time I film with a "photo camera".

I was really scare, so what I pass to my crew was:

"we have to do a film where nobody can say we use this type camera"

"The fact that is not heavy, you have to be very educated with that, and tend not to put it everywhere, but just in the correct place for each shot"

WHAT WAS GOOD

- The latitude
- The sensibility (3200 iso)



WHAT WAS BAD

- Ergonomics
- We took 2 weeks and a half to build the correct model to use... it's like a technical lego
- The fact that its not heavy, you have to be very educated with that, and try not to put it everywhere, but just in the correct place for each shot



POST-PRODUCTION

“To post-production I share the references with Paulo Americo, (the colorist) what I see in the shooting with my crew, he will see in the post, he’s part of the crew also.

We share the references to have a starting point, then it’s his moment, he understand the texture we’re after, and propose, in an artistic way, because I’m not very technical guy....so references help me to communicate with him.



We work together before several times, he knows my mind and style very well, his work is not only to improve the image but also to propose things, if they work in a dramatic way concerning the film we r doing , he has 100% freedom to do it

“The Chinese say that painting draws on three things: the eye, the heart, and the hand”

David Hokney in True to Life p 190

That’s what filmmaking is for me after all....”

João Ribeiro (AIP) nov 14th, 2016

Part 3: Extract of **Paulo Americo** presentation
The point of view & art of a colorist

- S-Log2: Gamma curve for [S-Log2]. This setting is based on the assumption that the picture will be processed after shooting.
- S-Gamut: Setting based on the assumption that the pictures will be processed after shooting. Used when [Gamma] is set to [S-Log2].
- When using S-Log2 gamma, the noise becomes more noticeable compared to when using other gammas. If the noise still is significant even after processing pictures, it may be improved by shooting with a brighter setting. However, the dynamic range becomes narrower accordingly when you shoot with a brighter setting. We recommend checking the picture in advance by test shooting when using S-log2.
- S-Gamut is a color space unique to Sony that provides a wide color space equivalent to film cameras. However, S-Gamut setting of this camera does not support the whole color space of S-Gamut; it is a setting to realize a color reproduction equivalent to S-Gamut.

DI ON DA VINCI RESOLVE 12

- 105 minutes film`
- Conform from Final Cut X generated XML
- 641 clips
- 400 GB of original camera media (1920x1080 H264 mov files)
- 28 VFX clips as DPX image sequences
- Mastering to image sequence TIFF 16 bits 1998x1080 (1.85:1)

DI ON DA VINCI RESOLVE 12

- The work spanned 7 weeks
- 18 working days
- 98 hours of work
- 6h conform
- 72h colour grading
- 15h mastering
- 5h QC



Methodology

From color to black & white





01:04:39:05

Navigation and playback controls including play, stop, and scrubbing tools.

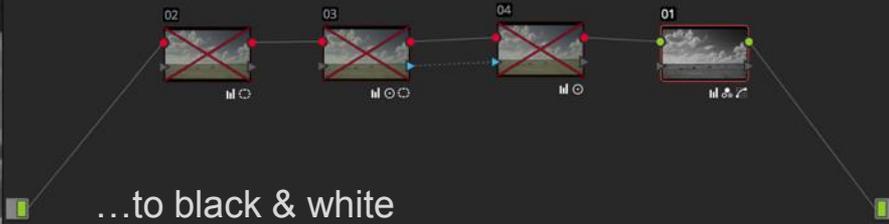
Color Wheels: Shadow, Midtone, Highlight, Offset. Each wheel has R, G, B sliders.

Curves: A graph showing a curve for color grading.

Custom: Edit (Y, R, G, B) and Soft Clip (R, G, B) sliders.

Scopes: Waveform and histogram showing luminance levels from 0 to 1023.

Bottom status bar: Cont 1.000, Pivot 0.500, LR 0.333, HR 0.667, Sat 50.00, Hue 50.00.



...to black & white

João, the cinematographer, used diagonally a neutral filter on the top right side of the image. Paulo, the colorist, enhanced the effect



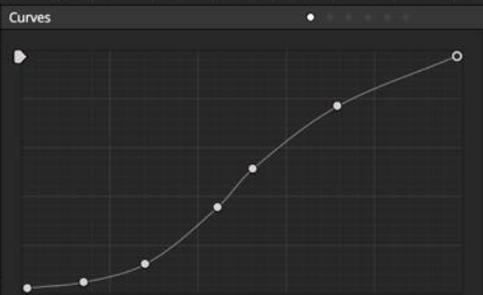
Color Wheels

Shadow Midtone Highlight Offset

0.00 0.00 0.00 25.00 25.00 25.00

R G B R G B R G B R G B

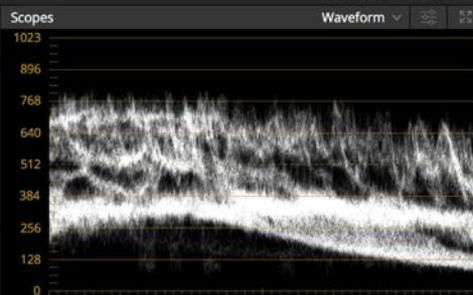
Cont 1.000 Pivot 0.500 LR 0.333 HR 0.667 Sat 50.00 Hue 50.00

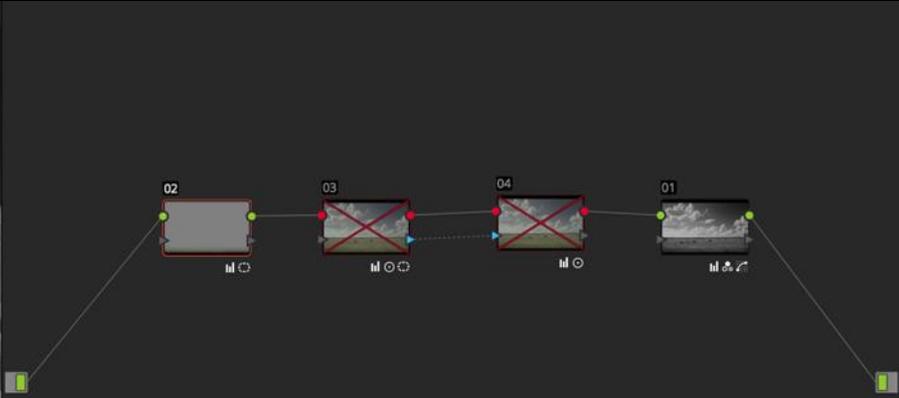


Custom

Edit 100 100 100 100

Soft Clip Low 50.0 High 50.0 L.S. 0.0 H.S. 0.0





Paulo used "power windows" to help the audience to focus on the convoy

Color Wheels

Shadow Midtone Highlight Offset

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.50 8.50 8.50 8.50 8.50 8.50

R G B R G B R G B R G B

Window

Linear Circle Polygon Curve Gradient Delete

Transform

Size 50.00 Aspect 50.00

Pan 50.00 Tilt 42.64

Rotate 180.00 Opacity 100.00

Softness

Soft 1 2.32 Soft 2 50.00

Soft 3 50.00 Soft 4 50.00

Inside 50.00 Outside 50.00

Scopes

Waveform

1023

896

768

640

512

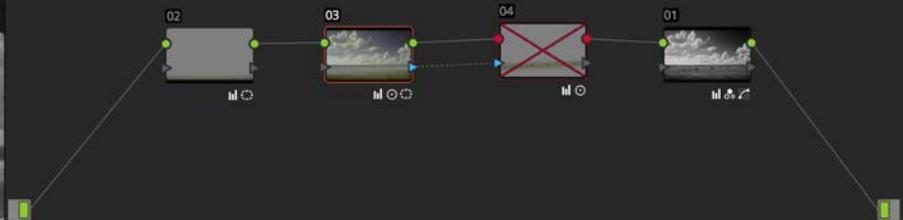
384

256

128

0

A 1 2 Cont 1.000 Pivot 0.500 LR 0.333 HR 0.667 Sat 50.00 Hue 50.00



The driving force of the convoy was selected

01:04:39:05

Color Wheels

Shadow Midtone Highlight Offset

R G B R G B R G B R G B

Window

Linear Circle Polygon Curve Gradient Delete

Transform

Size 50.00 Aspect 50.00

Pan 50.00 Tilt 50.00

Rotate 0.00 Opacity 100.00

Softness

Soft 1 6.00 Soft 2 50.00

Soft 3 50.00 Soft 4 50.00

Inside 0.00 Outside 0.00

Scopes

Waveform

1023

896

768

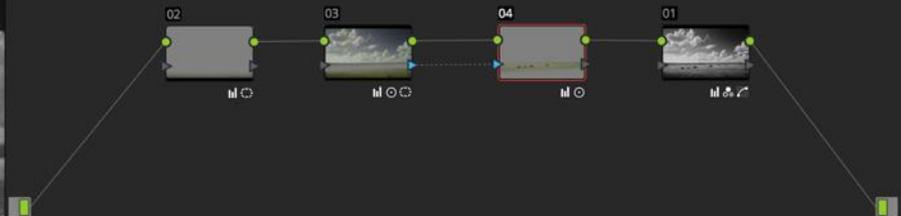
640

512

384

256

128



And this part of the image was brightened

01:04:39:05

Color Wheels

Shadow	Midtone	Highlight	Offset
R: 0.00, G: 0.00, B: 0.00	R: 0.00, G: 0.00, B: 0.00	R: 0.00, G: 0.00, B: 0.00	R: 25.00, G: 25.00, B: 25.00

Window

Transform

Size	50.00	Aspect	50.00
Pan	50.00	Tilt	50.00
Rotate	0.00	Opacity	100.00

Softness

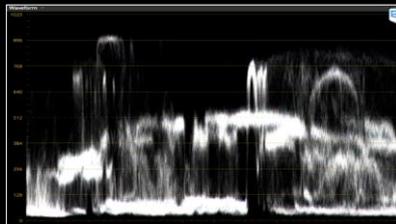
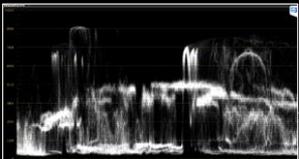
Soft 1	2.07	Soft 2	50.00
Soft 3	50.00	Soft 4	50.00
Inside	50.00	Outside	50.00

Scopes

Waveform



What the film may have looked in color ...



Methodology

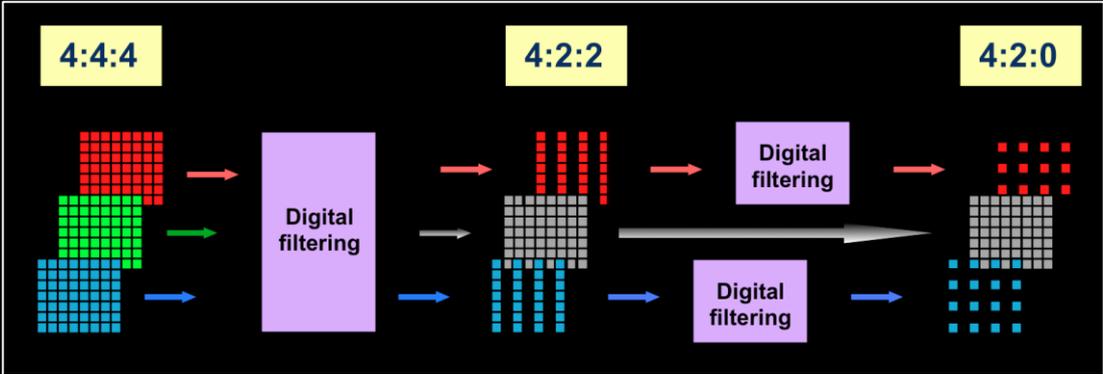
How to deal with a low cost recording format

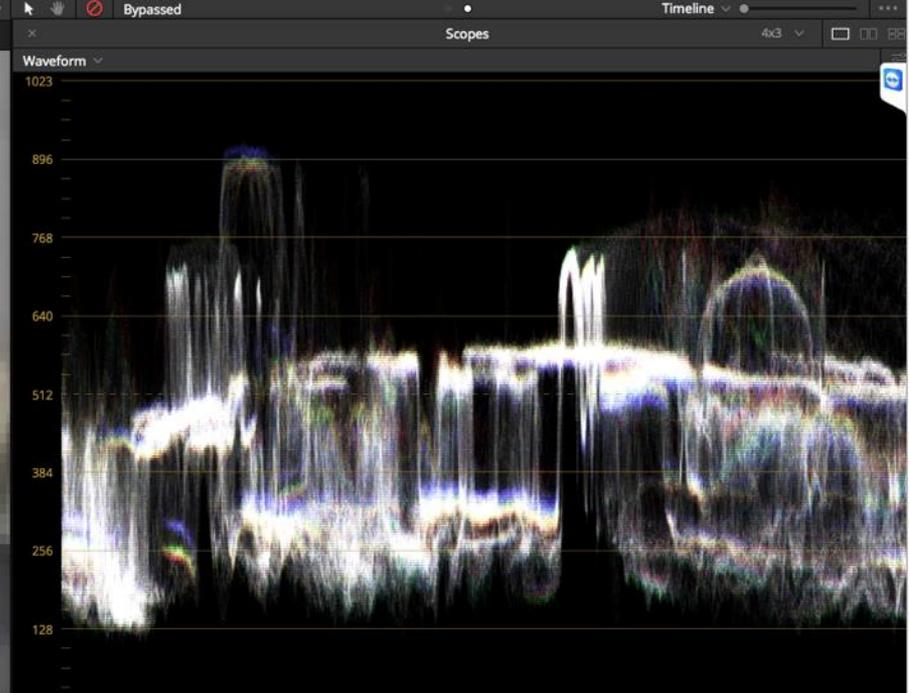
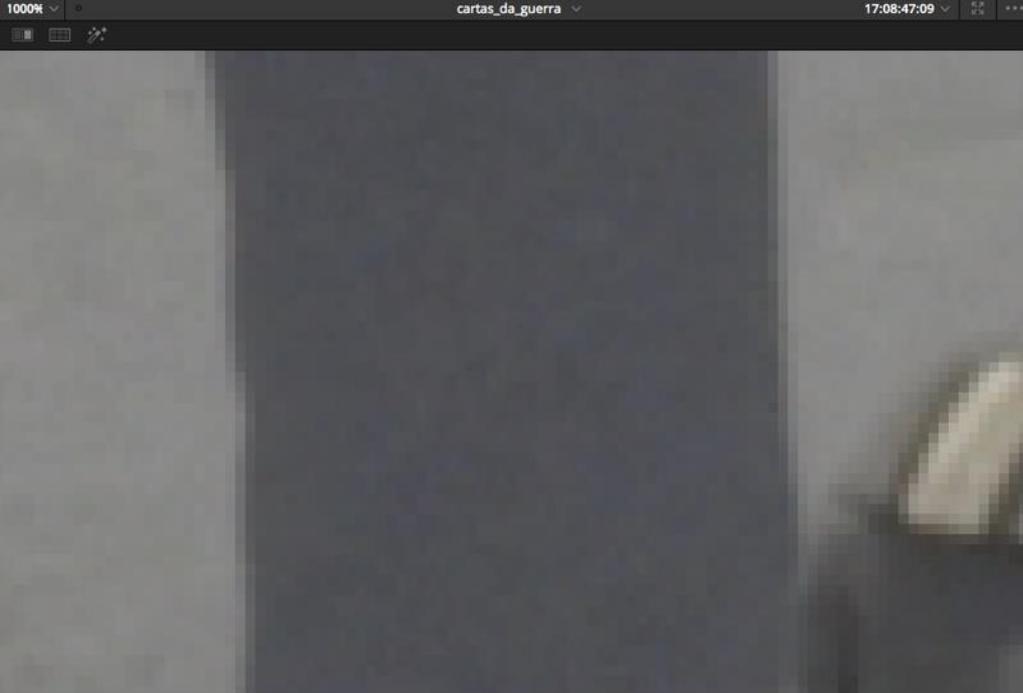




The 8-bit 4:2:0 h264 recording format is certainly not the best format to deal with the highest aesthetic demands

However Paulo Americo used the lack of color information as an asset for this black and white film.





Color Wheels

Log

Shadow

Midtone

Highlight

Offset

R G B R G B R G B R G B

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 25.00 25.00 25.00

A 1 2 Cont 1.000 Pivgt 0.500 LR 0.333 HR 0.667 Sat 50.00 Hue 50.00

Curves

Log

Zoom into the image in color

Custom

Edit

100 100 100 100

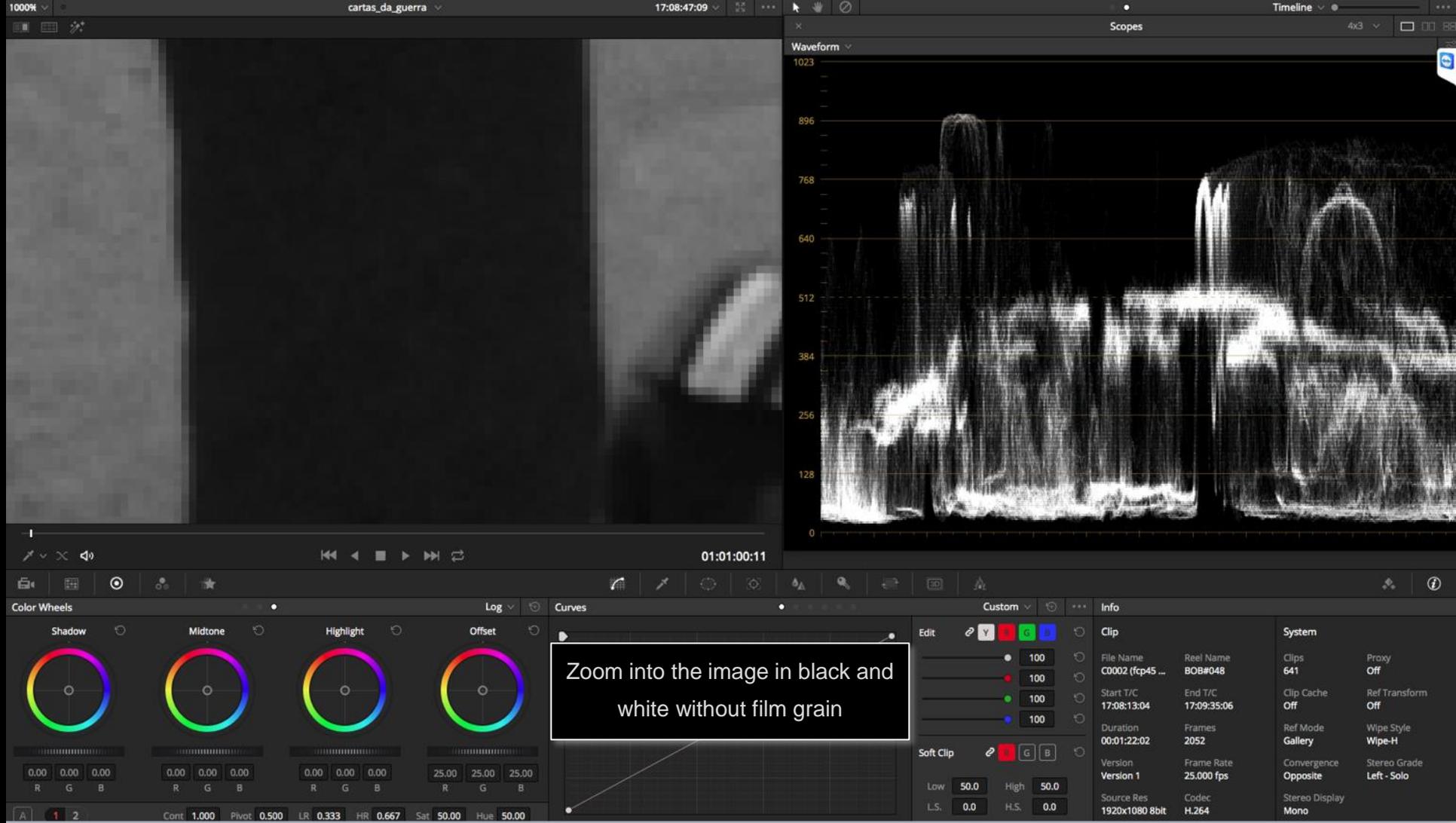
Soft Clip

Low 50.0 High 50.0 L.S. 0.0 H.S. 0.0

Info

Clip		System	
File Name	C0002 (fcp45 ...)	Clip	Proxy
Reel Name	BOB#048	641	Off
Start T/C	17:08:13:04	Clip Cache	Ref Transform
End T/C	17:09:35:06	Off	Off
Duration	00:01:22:02	Ref Mode	Wipe Style
Frames	2052	Gallery	Wipe-H
Version	Version 1	Convergence	Stereo Grade
Frame Rate	25,000 fps	Opposite	Left - Solo
Source Res	1920x1080 8bit	Stereo Display	Mono
Codec	H.264		





Zoom into the image in black and white without film grain

100
100
100
100

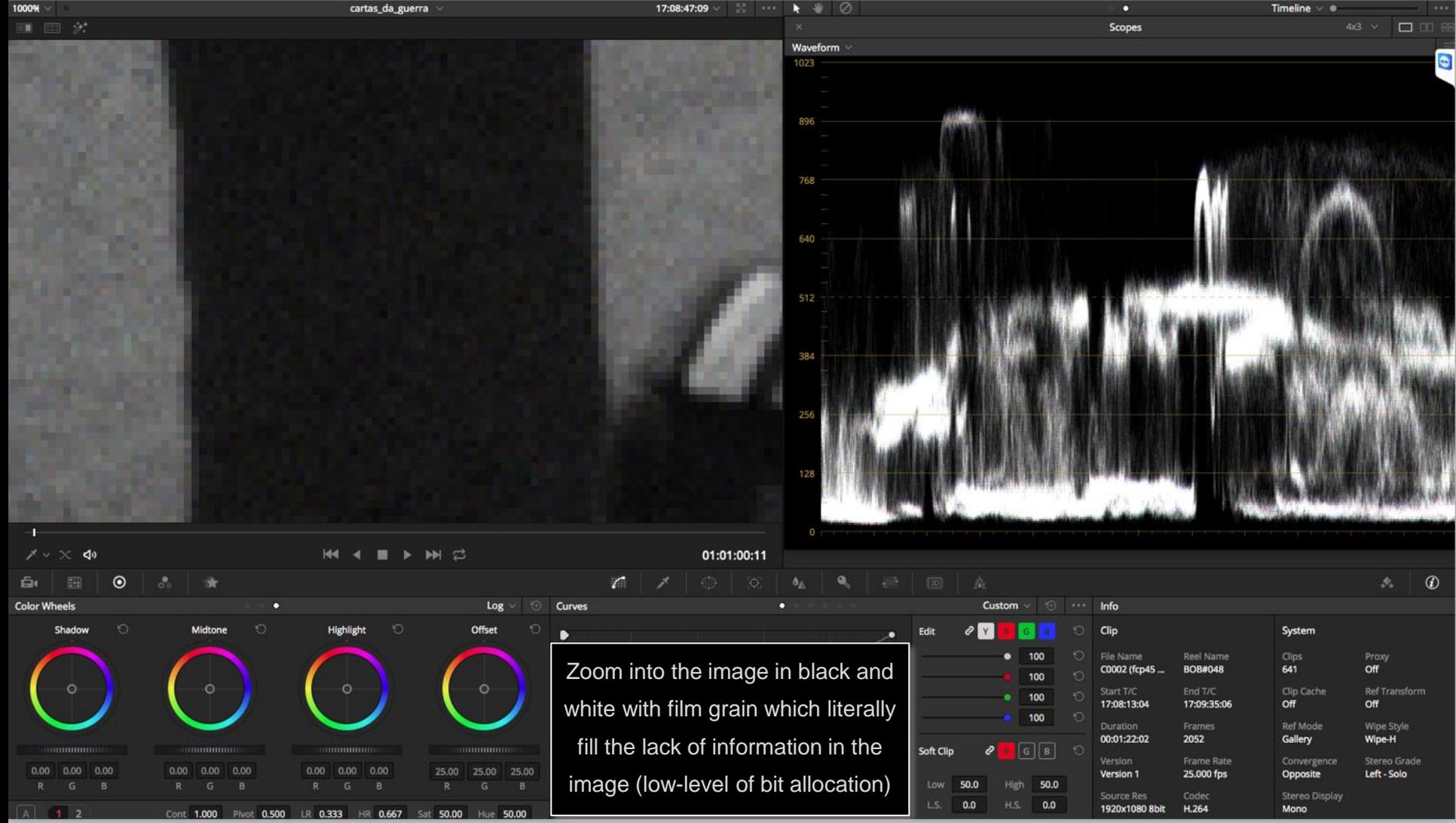
Low 50.0 High 50.0
L.S. 0.0 H.S. 0.0

File Name C0002 (fcp45 ...
Reel Name BOB#048
Start T/C 17:08:13:04
End T/C 17:09:35:06
Duration 00:01:22:02
Frames 2052

Version 1
Frame Rate 25.000 fps
Source Res 1920x1080 8bit
Codec H.264

Clips	Proxy
641	Off
Clip Cache	Ref Transform
Off	Off
Ref Mode	Wipe Style
Gallery	Wipe-H
Convergence	Stereo Grade
Opposite	Left - Solo
Stereo Display	Mono





Zoom into the image in black and white with film grain which literally fill the lack of information in the image (low-level of bit allocation)

Custom ▾

Edit

- 100
- 100
- 100
- 100

Soft Clip

- Low 50.0 High 50.0
- L.S. 0.0 H.S. 0.0

Info

Clip		System	
File Name	C0002 (fcp45 ...)	Clips	641
Reel Name	BOB#048	Proxy	Off
Start T/C	17:08:13:04	Clip Cache	Off
End T/C	17:09:35:06	Ref Transform	Off
Duration	00:01:22:02	Ref Mode	Gallery
Frames	2052	Wipe Style	Wipe-H
Frame Rate	25.000 fps	Convergence	Opposite
Version	Version 1	Stereo Grade	Left - Solo
Source Res	1920x1080 8bit	Stereo Display	Mono
Codec	H.264		



Without film grain



With film grain



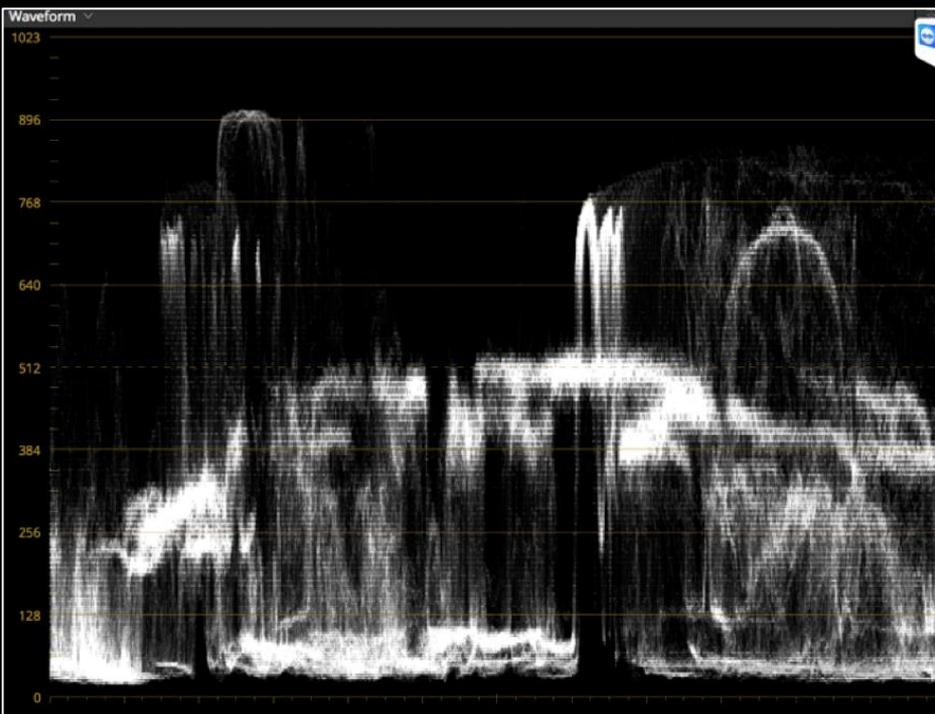
Without film grain

Zoom

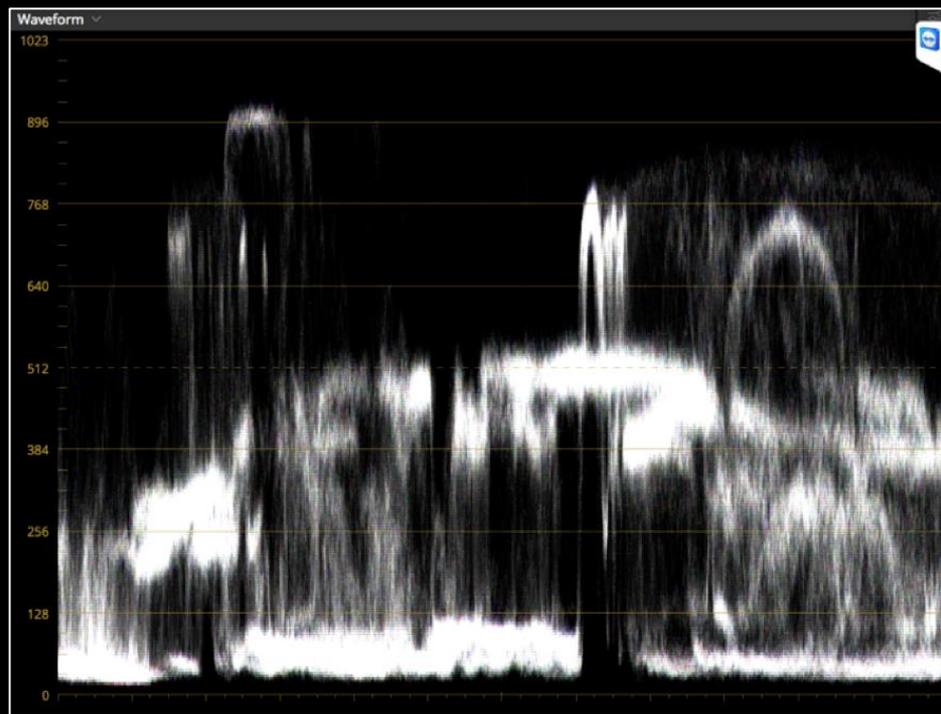


With film grainC

Zoom



Without film grain



With film grain

Notes:

Production:

O SOM E A FÚRIA

<http://osomeafuria.com/>

Post production:



<http://www.bikini.co.pt/>

Film grain emulation achieved with:

FilmConvert OFX Plugin

<http://filmconvert.com/plugin/ofx>

Fraunhofer Institute

<https://www.fraunhofer.de/en.html>

Easy DCP

<https://www.easydcp.com/>

Part 4: **Joaquim Carvalho** presentation
Photos from the shooting

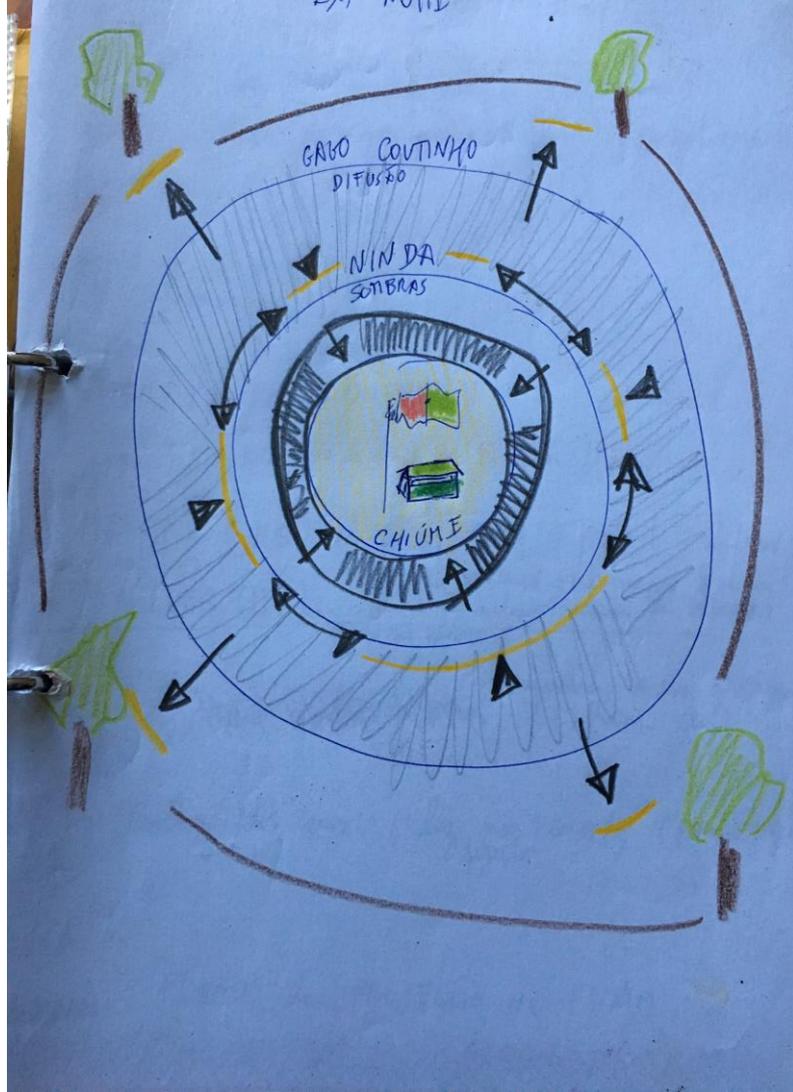
The novel from:

António Lobo Antunes

The military camp in Angola

The military camp in Angola was shot in fact in Angola and in Portugal

João's drawing





Ivo M Ferreira, the director in front of the future village location



The road to the village



Building the military camp



Building the military camp

The family







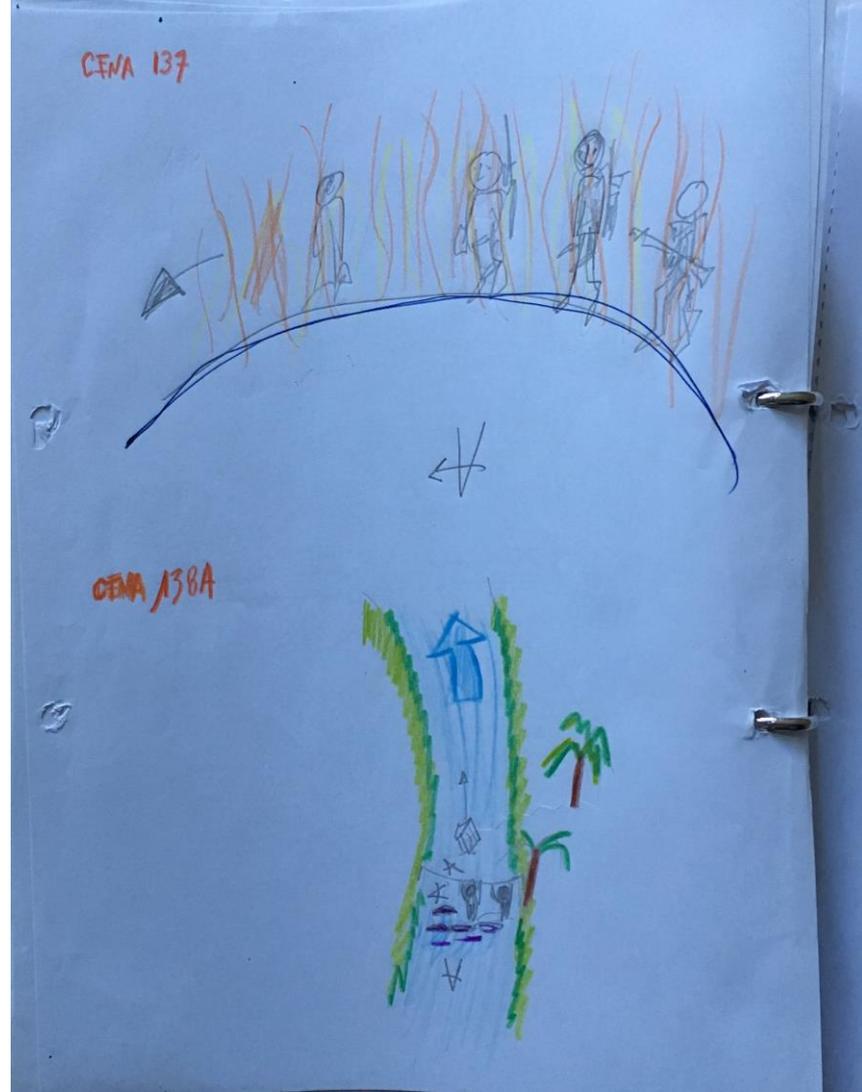


The Family & Joaquim Carvalho Production manager

The bridge

The bridge was destroyed during the civil war.
The production decided to rebuild for the script
allowing the village to renew the link with the
country.

João's drawing





















Shooting









AR E ULTRAMAR
AO NACIONAL
c. 125. 0800



