expertise with the purpose of adapting and migrating these digital files to film, partly adopting the techniques of standard digital intermediate post-production.

When printing a digital sequence on film, linear images have to be converted to logarithmic ones. The colour range (as well as several other aspects) of analogue film differs immensely from that of video images. The clips therefore have to be re-graded for analogue film, aiming to reproduce the general look of the original work as closely as possible, while at the same time acknowledging the specific traits that the use of analogue film adds to the work. During this most delicate phase in the process, direct communication with the artists is fundamental. It allows the works to come as close to the original vision as possible while at the same time mediating the inevitable transformations inherent in this migration. Once printed, artists who are used to seeing their pieces presented with a video projector are often surprised by the look of their works.

Technical equipment used: Grading performed on Assimilate Scratch. Recorded with Arrilaser.

Film stocks: Vision3 Color Digital Intermediate Film 2254; Vision Color Print Film 2383; Kodak Panchromatic Sound Recording Film 2374.

Each film was laser-recorded on colour fine grain internegative film at 4K (3656 x 3112) Cinemascope standard. The development, printing and processing were realised at Listofilm, Vienna. To ensure long-term access to the works produced within the project, the intention is to deposit and preserve all film negatives at the Austrian Film Museum.

www.filmmuseum.at

Alejandro Bachmann is Research Assistant at the Austrian Film Museum since 2010 and responsible for educational activities with schools and universities. He co-curates the *In person* film series and is a regular author for *Kolik Film*.

Matteo Lepore is a member of the Digital Restoration Department of the Austrian Film Museum.

PROFESSION: PROJECTIONIST

ARIE ALTENA

Filmtechniek is a small Dutch organisation that developed the apparatus that will be used to project the 35 mm *Vertical Cinema* works. Based in Rotterdam and run by film enthusiasts, it specialises in open-air film projections for film festivals and village fairs. Filmtechniek screens classic movies on 35 mm, and restored prints accompanied by live music. They can handle unusual formats and different projection speeds, and they love displaying the projectors, taking them outside the projection booth. In a sense, by remaining close to the projector during the screening and attending to all the little details they keep the old profession of 'projectionist' alive.

Filmtechniek's main field of interest is 35 mm film, although it does digital projection as well. It regularly collaborates with visual artists on 16 mm projects in the art circuit, and engages in special projects, including the screening of multi-screen expanded cinema works. Such screenings are complex and necessitate close collaboration between the projectionist and the maker, who often has very precise demands. 'That only makes it more fun', says Erwin 't Hart, one of Filmtechniek's projectionists. Respect for the material and for the filmmakers' requirements is their primary concern.

Sonic Acts asked Filmtechniek to come up with a way to project 35 mm film vertically. Filmtechniek was keen to cooperate as it has staff who do unusual things with a film projector. The task fell to technician Nico Komen, who did most of the technical development for *Vertical Cinema*, and who welcomes any challenge involving a film projector. A vertical film could be screened by printing the image vertically on the filmstrip and using a normal projector, but Sonic Acts and Filmtechniek discarded this option, as it does not make optimal use of the filmstrip. A second proposal, also rejected,

was using mirrors. This would result in the loss of too much light. Filmtechniek then suggested simply laying the projector on its side, but it quickly became clear that projectors are not built to be placed on their sides. It is all about trivial issues – little parts moving in an oil reservoir that don't run smoothly if a projector is on its side. Eventually they found and bought a projector that did not have the problems of a mechanical projector: a Kinotone FP30E that uses an electronic stepper motor. An electric motor such as this is not gravity bound.

The greatest challenge during the development, Dick Moesker, director of Filmtechniek, said, was trying to anticipate all the possible problems, and then determining if the envisioned problems were indeed problems. He wondered how a projector that was specially built for vertical projection would function, and mentioned IMAX, which uses 70 mm film that runs vertically through the projector. Erwin 't Hart noted that there have been many formats in film history that were used for a couple of years, but somehow never 'made it', including formats that used the filmstrip vertically. There are technical precursors to *Vertical Cinema*. Nevertheless, almost all film is horizontally oriented, like our human field of vision.

Working with analogue projection is a specialised field, especially now that digital projection is the norm. The staff at Filmtechiek believe that there is a future for analogue film as more and more artists rediscover the beauty and possibilities of 16 mm film and 'the more expensive' 35 mm. They are committed to achieving technically perfect screenings, as the impressiveness of a film also depends on the circumstances: darkness and the correct arrangement of projectors and the public. Only then can a screening become a true event.

Based on an interview with Dick Moesker and Erwin 't Hart
www.olb.nl

Arie Altena (NL) is a member of the Sonic Acts curatorial team. He studied literary theory and regularly writes about art and technology.

Vertical Cinema is the third Kontraste Cahier in a series edited by Sonic Acts. It is published on the occasion of the 2013 Kontraste Festival, *Dark As Light*, 10–13 October, Krems, Austria, curated by Sonic Acts and produced by Kontraste.

The Kontraste Cahier series is made possible thanks to Klangraum Krems Minoritenkirche and NÖ Festival und Kino GmbH, Austria.

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Print
good friends Druck- und Werbeagentur GmbH

Kontraste Cahier – special thank you to
Michael Bielicky and Šárka Hejnová.

Vertical Cinema would have been impossible without all the filmmakers and artists, Alejandro Bachmann, Erwin van 't Hart, Nico Komen, Matteo Lepore, Johann Lurf, Bernhard Maisch, Adriana Noviello, Herbert Fischer and Gerhard Frank.

Special thanks to Pierre Ballings, Bernard Foing, Albrecht Grossberger, Alexander Horwath, Dick Moesker and Steven van Teeseling.

Published by
Sonic Acts Press
Weteringschans 6–8
1017 SG Amsterdam
The Netherlands
info@sonicacts.com
www.sonicacts.com

ISBN: 978-90-810470-7-4
NUR: 640

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Vertical Cinema is a project of Sonic Acts in collaboration with Kontraste Festival, Austrian Film Museum, European Space Agency, Filmtechniek BV and Paradiso, generously supported by Mondriaan Fund.