

of large-format (in this case, huge-format) negatives. New solutions were also needed to keep the 20 x 24 inch negative optimally positioned during projection. Initial attempts were sobering and led to stretching of the negative. The idea of simply adapting the dimensions of a classic glass holder to the required format was also discarded because, due to the weight of the glass, it showed significant buckling. In the end, two solutions were delivered: a combination of anti-Newton glass and museum glass, and anti-Newton glass in a metal holder pressed together with magnets. The mechanical design also had to be extremely stable to ensure the necessary precision. This in turn led to the use of some very heavy individual components which would require a body-builder as operator/lab technician. To make it both safer and easier to operate, mechanical brakes were designed into the new product along with motor-driven assists. Anton Ivanov was involved in all phases of planning and construction to ensure that the enlarger could be operated practically and productively in its intended home.



Anton Ivanov and the MAMONT at the Art of Foto Gallery and Lab in St. Petersburg, Russia. The rails on the floor were for an older horizontal enlarger; the MAMONT doesn't need them.

No less complex than the mechanical design was the electronic hardware and electromechanical design. Heiland's goal from the beginning was to forego rail guidance. But the 400+ kg (almost 900 pound) enlarger still needed to be easily movable, and not cause any problems with image projection during fine positioning. The end result of years of problem-solving is almost magical; using a remote control, the MAMONT drives smoothly, almost majestically. The height is set electronically via motors and gears. Once the projection distance is reached, the precise final alignment takes place via a built-in laser system. The exposure is carried out using a high-powered LED light source which also required very complex development and production; it was necessary to individually select no less than 16,000 light-emitting diodes with the appropriate light spectrum output, and then install them. The programming of the software also involved over a thousand man-hours.

Due to the enormous scope of the project, the closing date was slightly delayed, and all promotional material needed to be made in one day. The MAMONT was disassembled and taken to the Leica Studios in Wetzlar especially for this purpose. Seeing the monster in action as it glided around the huge studio was an astounding experience, reminiscent of behind-the-scenes coverage of Hollywood blockbuster science fiction films. The day after this demonstration, it was again disassembled and packed carefully for its trip to St. Petersburg.



Jürgen Heiland and Wolfgang Walberer, the design duo behind the MAMONT



Jürgen Heiland really got into his work in St. Petersburg

Jürgen Heiland made the trip to Russia with the MAMONT to be able to ensure proper assembly and instruction. In St. Petersburg, he encountered the small, passionate group of photographers who are the driving force behind Art of Foto, which is a combination of a photo gallery, studio, framing shop, and darkroom. The members of the group shoot everything from 35mm to 20x24" themselves and are insistent on having only the best equipment in their studio. The addition of a one-of-a-kind rail-less mega-enlarger complements two 20x24" cameras, a Donchev Studio and a Chamonix Field model. (Ivanov jokes that the designation "field" camera is only appropriate if you have about five friends with you to help carry and operate it.) The main motivation to invest in the monster machine was to be able to use it themselves; however, they are also happy to print for other photographers from around the world from their ultra-large-format negatives. The group even maintains a guest room for foreign photographers in the same building as the Art of Foto premises.

Ivanov wrote to PhotoKlassik International, "We were dying to play with it when it arrived, like kids who unpack

a new remote-control car on their birthday. Everything worked perfectly from the very first negative we tried: calibration, measurements, lasers, stability, split grade, all the heavy mechanics, loading the ultra large format negative, focusing, and remote control. Jürgen Heiland and Wolfgang Walberer have created a masterpiece for analog photography. Sometimes I think that it's almost too much—too much precision, too much perfection. Normally in film photography, nothing is so perfect, and the art lives from the tiny imperfections... But if Heiland Electronic produces something, it has to be perfect, even the parts nobody will see. Jürgen Heiland will not sleep until it is so."

This project called for everyone involved to go "above and beyond." Interestingly enough, more than 80% of all the components were manufactured within a 20 km radius of Wetzlar. It is reassuring to know that following legendary devices such as the Leitz Focomat, a 21st-century enhanced enlarger such as the new MAMONT is also produced in the traditional photography Mecca of Wetzlar.