

# Lasershow of the Superlative above Budapest

The Southern-German-based laser expert LOBO staged the Hungarian National Holiday with a laser spectacle of so far unknown dimensions.



On the occasion of this year's National Holiday LOBO lasers dominated the airspace above Budapest.

**Budapest, 30<sup>th</sup> of August, 21:00 p.m.**

1,2 Million people gather on the banks of the River Danube. On the river are hundreds of boats and pleasure steamers. Whoever could not be on the spot, makes oneself comfortable on balconies or tries to get hold of a place on top of the towers and roofs in the city.

Already for some time, the entire nation is informed by live pictures taken from the ground or out of helicopters.

Then suddenly all street lights in the city switch off and it seems unreal quite in this usually busy capital. From one second to the other, a loud metallic-like bang and a deep rumble break the silence. At the same time glaring bright

laser beams from everywhere cut through the dark sky and open up slowly like miles-long fingers synchronously to the music, which can hardly be heard because of the euphoric cheering of the masses.

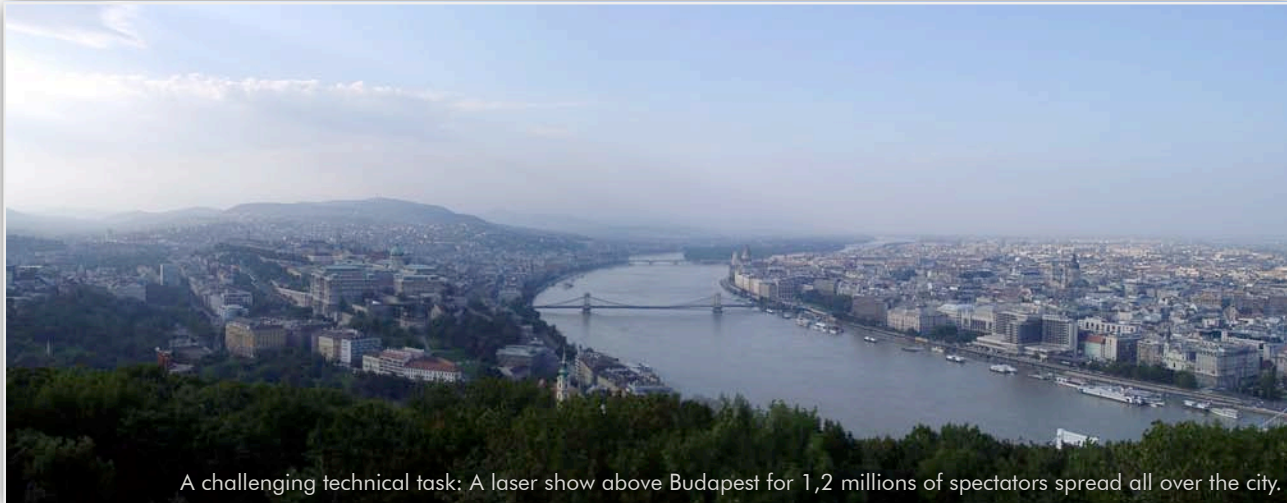


Huge crowds gather on the banks of the Danube.



Abstract laser patterns scan the danube.

No, it has not been aliens invading the Hungarian Capital, but the laser wizards of the Germany-based laser specialist LOBO who produced a gigantic laser spectacle in combination with fire works on the occasion of the Hungarian National Holiday.



A challenging technical task: A laser show above Budapest for 1,2 millions of spectators spread all over the city.

**Challenging the Floods**

Although the celebrations for the Hungarian National Holiday reaches back to a centuries-old tradition, this year everything was different. And that was caused by the heaviest floods of the century at which the River Danube flooded many areas in Hungary. Although Budapest is protected against these kind of disasters by huge barriers, the peak of the flood wave was predicted to reach Budapest on 20<sup>st</sup> of August, the actual date of the National Holiday. This lead to emotional discussions in the media whether it is sensitive to stage a show of enormous dimensions, at times where thousands of habitants sink in mud.

In addition, there appeared other problems of practical nature: The banks of the River Danube with all directly adjoining streets were flooded and every



A few days ago there has been a busy road at this place.

day event sites which were urgently needed for the expected spectators disappeared. The chaos was inevitable. Therefore, one day before the National Day the Prime Minister, also the principal of the event, decided to postpone the celebrations to the 30<sup>st</sup> of August.

At that point of time, the complete laser technique was ready to operate at the push of a button and also the company Pyro-Art from Berlin already prepared tons of fire work material including 7 kilometers of ignition cables on the Citadel on top of Gellert Hill. Despite the postponement of the event, the final rehearsal of the laser show took place as planned on 19<sup>st</sup> of August. During the two-weeklong enforced break, a

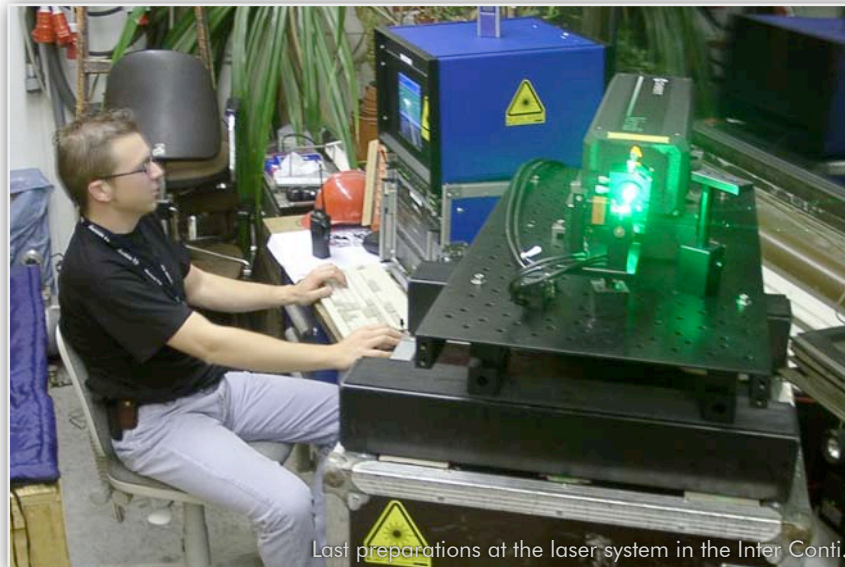
LOBO technician kept the laser systems on-site in stand-by mode.



On the roofs of the city.



A large Laser Truck at the Danube served as the central control station.



Last preparations at the laser system in the Inter Conti.

### Technical Aspects

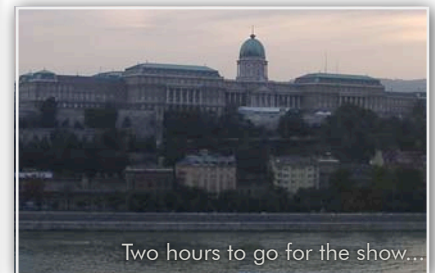
The Hungarians are quite spoiled in regards to the National Holiday Celebrations. As long as anyone can remember, every year a big firework round Gellert Hill is let off. But this year the organisers had an extraordinary idea: By means of laser, the event should be carried directly into the heart of the city, the people should be really surrounded by laser.

Although this task seemed to be simple, the technical transposition was very complex. The problem was to cope with enormous distances and at the same time to provide enough laser power in order to stand out against the fire works



LOBO on historical ground: Laser technique on the roof of the Citadel.

only offer the technical possibilities but also the know-how and the creative



Two hours to go for the show...

potential to transfer a project of such dimensions professionally.

At the beginning was an intensive planning phase including an inspection on-site in Budapest, several tests in the LOBO studios in Aalen and the analysis of the optimal locations for the projectors. Further it was essential to adapt each type of laser with its beam characteristics and its psycho-optical quality as well as the infrastructural requests perfectly to the different positions. Last but not least, LOBO tried to integrate exposed locations, e.g. the Citadel on top of Gellert Hill, the Castle or the TV tower in the project.

and the lights of the city. Further a technical functional solution had to be worked out which allowed the synchronisation and controlling of the laser projectors over several miles.

Therefore it is no wonder that the organizers engaged the world-wide renowned laser specialist LOBO, who could not



Glaring laser beams cut through the dark sky from all directions.

The final concept included nine independently controllable laser projectors spread all over the city. These were controlled digitally via five workstation of LACON series synchronized by each other. A large Laser Truck placed at the west bank of the River Danube served as the controlling and programming station.

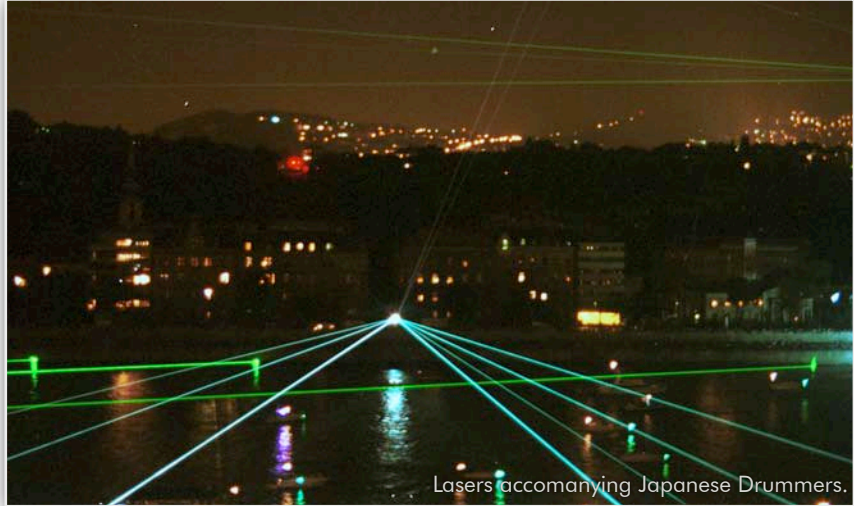


Setup at the TV tower.

Diode-pumped solid state lasers of the latest generation were used for the projectors located in the city as well as for the ones which were up to 6 km away from the city center. These lasers stand out by their extremely high beam quality and an optimal visibility. Gas-ion lasers were used on the Castle and in the Laser Truck at the river. Latter generated a white light power of 57 Watt.

After only two set-up days, the entire laser system was ready for operation and during the remaining nights until the event, the seven-person set-up team engaged themselves with the adjustment and optimizing of the show.

At the same time, the technicians of Pyro-Art wired 1.800 bombs, 1.000 Roman Lights, approx. 900 Bengali lights as well as many special effects on



Lasers accompanying Japanese Drummers.

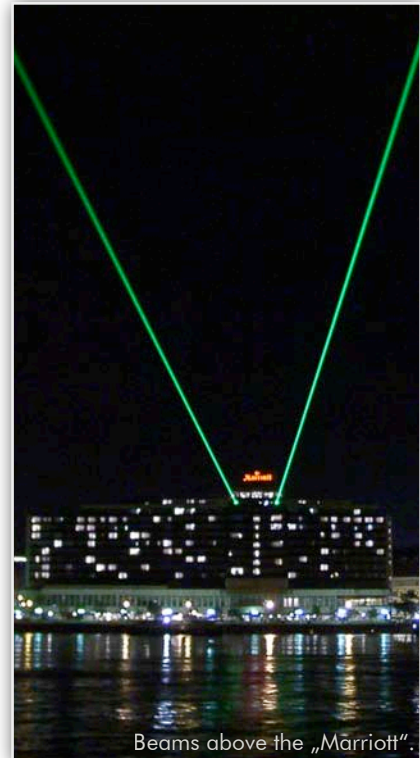
the Citadel. And in addition, a Hungarian fireworks company installed about the same quantity of fire works effects around Gellert Hill.

### The Event

What previously has been planned as the official highlight of the National Holiday, was now staged as a benefit event initiated by the Prime Minister, which was broadcast nation-wide on TV, in order to support the flood victims. The stream of spectators concentrated mainly at the banks of the River Danube, where also additional highlights on stages, special events in hotels and on pleasure boats were offered. Just before the event, the river police had been very busy to keep away boats from the laser safety areas. And in the streets, every object which insured an optimal view onto the spectacle had been climbed.

As the acoustic coverage of the event could only be effected in limited areas and also with enormous delays due to the local conditions, the complete sound track was broadcast by two radio stations. Thus ensuring that everyone, even in their homes, was able to hear the music in top quality.

The beginning and the end of the show were exclusively done by lasers. Laser-supported passages with Japanese drummers on the Chain Bridge smoothly passed over in a concept interwoven with laser and fire works.



Beams above the „Marriott“.



Laser draws the outline of the Castle.

Creative-Director Alexander Hennig: "We searched for strong synergetic effects between laser and fire works. The task was to emphasize the advantages of each technology without diminishing each other. Therefore we decided to bring out primarily the percussion parts of the music with laser while the fire works primarily supported the melody line. Although we never had the chance to rehearse the combination of laser and pyro technique in advance, I have to admit that I was really overwhelmed by the result which immediately made me forget the long nights of hard work."

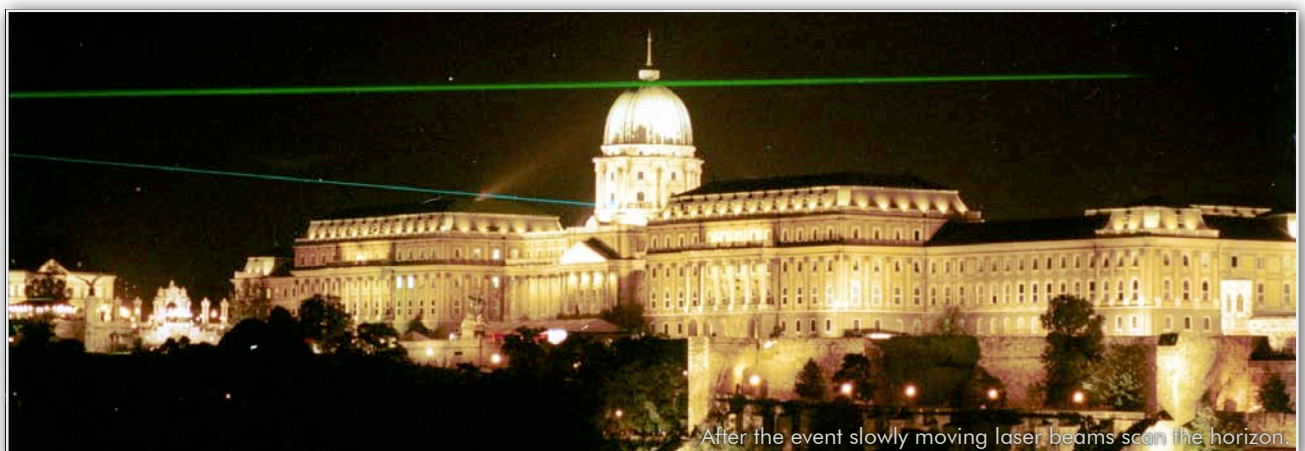
A brilliant finale with massive laser effects and endless fire works cascades culminated in an gigantic pyro waterfall

raining down from the Elisabeth Bridge into the Danube, while writings were projected with laser onto the Gellert Hill, the Castle and the building facades along the riverside thanking the Hungarian people for their generous donations.

The so far unknown storms of enthusiasm, which have been aroused especially by the laser effects, causes hope, that it has not been the last laser show presented on the Hungarian National Holiday.



Giant pyro-water fall on Elisabeth Bridge.



After the event slowly moving laser beams scan the horizon.

**Important Notice:** All laser effects on the images derive from real photographs and have not been generated on computers.