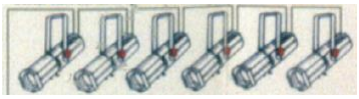


TBA Magic Lantern - History

Designer: TBA - Tim Burnham
Introduced: 1985 - but ultimately never made it into production
Spotlight family with 36V 400W projector lamp (HLX), condenser optics, integrated dimmer, network control

The Magic Lantern was a glimpse of the future, shown to the world in 1985. It used a low-voltage lamp projector that allowed the design of a high quality optical system, allowing a 400W fixture to give a light output comparable to the 1000W fixtures of the day. To control that the fixture had a built-in dimmer: you connected it to power and data, gave it an address then controlled it using a digital control signal from the lighting desk. Of course we take all that for granted now, but this was 1985 - before LED spotlights or even DMX had been invented. It was to be available in 12-30˚ zoom profile, Fresnel and PC versions.

Sadly its technology was a little too ahead of its time, and though the fixture received great acclaim on the trade show circuit it ultimately never made it into production.

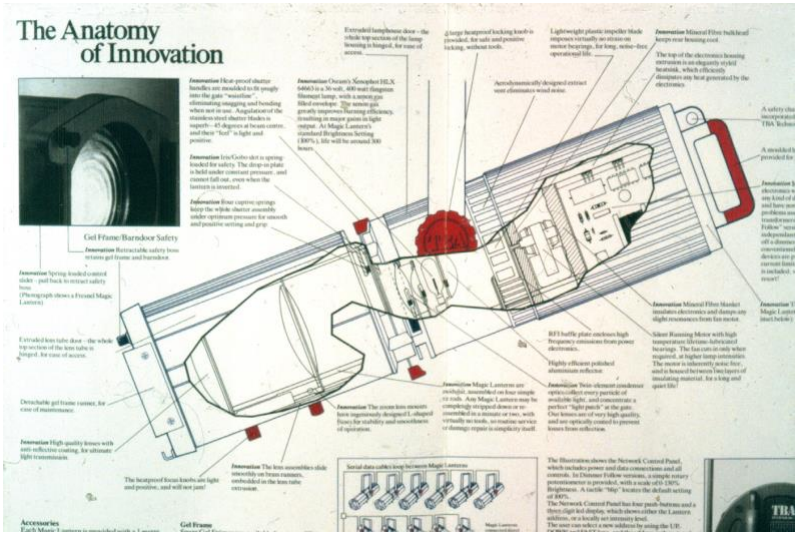
The Magic Lantern was the creation of Tim Burnham. Tim had discovered theatre and lighting as a member of the National Youth Theatre. By the early 1980s he had set up his own lighting company, Tim Burnham Associates (TBA), working in the then-new field of corporate and industrial shows. Later he set up the theatre lighting division at ARRI, bringing to market firstly the Connexion demux unit (one of the first products to use the new DMX control protocol) then the Arri Image and Imagine range of lighting consoles, which repackaged ETC consoles for the European theatre market and rapidly displaced Strand's consoles for many applications.
http://www.theatrecrafts.com/pages/home/archive/manufacturers/detail/?id=21

After that he worked for ETC itself. He now runs Tempest, which creates waterproof enclosures for lighting fixtures and video projectors.
http://www.tempest.biz

Perhaps easiest to let him tell the tale of the Magic Lantern:

> "It was the early eighties - I was running my own boutique lighting business in North London, specializing in the early days of industrial shows, and not getting much sleep. I was looking for a life after touring, but touring was all I knew. Unless…
>
> It struck me that if you could make a super-efficient spotlight that used

20% of the power of a 1000W lamp and had its own dimmer on board you could eliminate dimmers, a ton of cables, and save a packet on electricity. ‘Duh’, you say, it’s called an LED ellipsoidal, and you’d be right, today. But not then. It took me five years to assemble the team, the technologies, and the finance; the result was the most innovative stage light that never lit a stage – Magic Lantern.



We took a tiny 36-volt photographic lamp with a very compact filament and built around it a 4-lens condenser optic that collected every photon that lamp put out. It was very efficient, but hell to align; at its best it compared very favorably with the lekos and profiles of the day. We developed what would later be called a sinewave dimmer (so I knew how risky that was when consultants started calling for them twenty years later), and housed it behind the lamphouse, feeding it power and data as you would (now) expect. This was before the time of DMX512, and we started out using the Colortran protocol of the day, which at least existed, even if they did eventually slap a cease and desist order on us, for reasons I never really understood.

What killed Magic Lantern in the end was partly that we ran out of money before we could begin production, and partly that at the last moment we realized that it burned holes in gel (gel was colored plastic that people used to put in front of lights to make shades other than white, if you can believe it). The Altman 360Q did the same thing, but it killed us dead.

It has been said by those old enough to remember – and mercifully there aren’t many of us left – that ML was an idea ‘way ahead of its time’. Probably true, and it cost me my business and my house, but it was a hell of a learning experience:

- Every aspect of the technologies used was slightly beyond what was possible at the time – marginal engineering is very, very dangerous…

- I had zero manufacturing experience and had no idea how hard it can be, even on a good day. Remember, the hard part about manufacturing is everything.

- I hired an industrial design company. Don't. Ever. Do. That.

- I had to lay off about thirty good people for no fault on their part. Now I'm really careful about hiring…

On the other hand, it was a very cool idea, and if it had worked out it would have changed our world. It certainly opened doors for me in the years that followed, and I spent the next twenty years learning the things I should have known back then. "

Finance came from City of London venture capital investment - "an education in itself," Tim adds. The design team included an optical designer, in the days before ray-tracing software, plus three electronics engineers for the dimmer. For those wanting to use it in more conventional theatre installations with existing dimmers the fixture also had a 'dimmer follow' mode, where it would fade under dimmer control albeit with a slightly peculiar fade curve. Fixture to fixture data connection was using telephone connectors as Burnham "didn't think anyone would pay for two XLR connectors per fixture!" As with many other fixtures of the day, the Magic Lantern wasn't black - the metalwork was dark blue, with magenta handles and knobs. Target pricing was for one Magic Lantern to cost about the same as a traditional fixture plus half a traditional dimmer.

Writing about the fixture in his report on the 1985 ABTT Trade Show in *Cue* magazine (where it won Product of the Year), Jim Laws noted that this was a taste of the future, and wondered "will there come a time when theatres are built without dimmer rooms?" He thought there would, and soon. "Ken Billington reminded me about the 'little blue leko' maybe thirty year later, so there's no question it caught people's attention." Burnham notes.
http://www.theatrecrafts.com/archive/albumviewer.php?id=222&page=1&type=j

Others who saw the fixture demonstrated remember being impressed by it, but also recall that even during demos there were challenges with the built-in dimmer overheating.

Some were ordered, including a batch from a young upstart company in America called ETC, who sold the first system. "ETC was five guys in a garage at the time. Fred Foster and I actually drove from Madison to Rockford, Illinois together and sold the first system to a theatre there. He paid me up-front, which unfortunately he lost when the receiver was called in," Burnham recalls. "This was right up Fred's alley, but Dave Cunningham was smarter than me and tool a less risky path with the Source Four."

TBA was struggled to build them, and when at the last minute they realised they would destroy gel, and that the money needed to solve the issues was running out the end of the fixture came. Tim Burnham: "Truth is that by that time even I realized that there were just too many problems associated with the sinewave dimmer piece, and the gel-eating was the last straw. I was exhausted, and no-one else would touch it if even I couldn't work up the enthusiasm…"

Along the way, TBA used the same tooling to make a more conventional 650W/240V fixture, the TBA '65 Series'. Of the Magic Lantern, a pre-production batch was made - but none are thought to have survived.

http://www.theatrecrafts.com/pages/home/archive/equipment/detail/?id=20230