



Jon Masters is a UK-based embedded Linux developer, writer, and consultant. He has been actively involved with the Linux community since starting his first degree at age 13. Jon is currently a member of more than 50 Linux User Groups around the world.

In recent years, new features have begun to appear in car stereos.

These days it is not hard to find a car audio system with mp3 playback, iPod integration, and a lot more. But it hasn't been long since the notion of playing mp3 files in a car was quite novel. In fact, when it first hit the scene in 1999, the Linux-based Empeg was the world's first mass produced in-car mp3 player.

Remembering the Empeg

The Empeg car player was a radical departure for car audio. To begin with, the Empeg was not a regular CD player; nor did it have a built-in radio receiver or a means for interfacing with an iPod. What the Empeg did offer was a sizable internal hard drive that was able to hold a vast library of music at a time when hard drive mp3 players were essentially

Community Notes

AUDIO REUNION

Jon Masters attends the 7th annual Empeg European owners meet in Cambridge, England and rounds up the latest news from the Linux User Group community. **BY JON MASTERS**

unknown. The system, which was built on a custom-designed embedded Linux platform, was designed by Empeg engineers in their Cambridge offices and later hacked by members of the owner community.

Some interesting members of the Linux community got involved with the project over the years. These volunteers include Mark Lord, a programmer from Ottawa, Canada who originally wrote much of the Linux kernel IDE support before developing custom hacks to support Empeg audio balance, external phone control, and even custom docking stations. One of the most interesting things about the Empeg is its hackability – it's an incredibly versatile platform. Most of the source code is available, although Empeg did choose to keep some of the code proprietary (even to the bitter end), but that hasn't affected the ability of the user community to add newer features.

Even today, years after the last Empeg left the factory – and indeed, a number of years since Empeg the company ceased to exist – the Empeg owner community is still strong. You'll find an active and vibrant collection of die-hard Empeg enthusiasts on the Empeg BBS forum <http://www.empegbbs.com/>. These Empeg developers work together to support their common interests, add new features, effect repairs, and generally keep the cult of Empeg alive. Over the years, they've done everything from custom metalwork for the casing, to new plastic injection

modeled fascias, to hardware and software hacks.

Rendezvous

Since I'm a big fan of interesting Linux communities, I decided the annual Empeg owner's meet in Cambridge would be a good opportunity to link with the folks who keep this project alive. With that in mind, I journeyed to Cambridge on a warm weekend in September and hooked up with my good friend Hussein (later winner of this year's "Best Installation" award) to drive down to the owner's meet at the Duxford Aviation Museum. We drove in convey with a large number of fellow enthusiasts, and we were even joined by a tank-like vehicle kitted out with an Empeg installed in the small space between sets of armaments.

When we arrived at Duxford, we took some time to examine each other's latest hacks (I especially enjoyed the TVR install and the "tank") before attending a few good competitions and a series of talks on the latest developments. We learned who was doing what now that



Figure 1: This impressive vehicle includes an Empeg-based sound system for the audio road warrior.

Empeg is truly no more, and we discovered that the spirit of the Empeg lives on in various other projects, some of which actually license parts of the original Empeg design. For example, mp3-based DJ scratching decks, video mixing equipment, and a number of other tools use parts of the Empeg.

During the course of the morning, the original design engineer who had worked on the Empeg gave us an impressive talk on his latest interest in model airplanes. He showed us video of his stereo-camera equipped planes with remote video feeds – something very similar to the kind of unmanned UAV drones that are now flying in war zones and above some major cities. Later, we would see some of his other robots, including a remote rover vehicle, and the usual mixture of crazy gadgets (everything from potato rocket launchers to GPS-enabled radio tracking devices and a lot more besides).

By lunchtime, we were judging community awards while debating the future of the Empeg and of the community of enthusiasts who work to keep the project alive. Many of the folks who helped build the Empeg have since gone on to other things – although many of them turned up to the meet. There is some debate about how much longer events of this kind can be held, but it certainly was a geek fest to be reckoned with. By the time we hit the final evening party, we'd had a look at an SR-71 Blackbird in



Figure 2: The Empeg has hidden powers its original designers never imagined.

the US hanger and even taken a trip on a 1930s Dragon Rapide bi-plane. All in all, it was a completely random yet interesting way to while away an entire weekend with Linux audio geeks.

News from the LUGs...

This month was relatively light on major Linux announcements. As a result, chat covered more ordinary topics – storage, networking, and security being big topics in the North Eastern United States, while an interesting thread on the relevance of Linux certifications brought up an old topic on the New York (NYLUG) list.

Perhaps the most interesting mail I saw this month on the US lists came from Peter Kellner and was posted to the Silicon Valley LUG concerning a CodeCamp event. It turns out that the Microsoft-sponsored CodeCamp was looking to encourage a greater degree of non-Microsoft participation (as they put it) and especially to pull in involvement from the local (SVLUG) Linux community. I must confess some interest in the idea of hosting talks on MySQL, Real-Time

Linux, and PHP at an otherwise Microsoft event, but it's hard to see many Linux users getting excited about it, beyond poking fun at their Microsoft counterparts.

Meanwhile, the Canadian Linux User's Exchange (CLUE) spent some time over the past few weeks debating letters to parliament about the rights of individual information technology owners in light of what will probably be a major copyright debate during the new parliamentary session. I'm not entirely sure what exactly is expected, but I'll keep an eye on the lists to find out.



Figure 3: When the Empeg crowd took to the water, I had the honor of serving as a gondolier.

The UK lists had their usual eclectic mix of discussion. On the Brighton Linux User Group, members discussed firmware alternatives for Linksys Routers that could provide good Quality Of Service and other features (personally, I still favor openwrt on my own Linksys routers), while debate in Hampshire included setting up SPF for anti-spam provision (by providing a mechanism for proving your mail is genuine).

In Manchester, several members discussed Asterisk server configuration. (I just got myself hooked up with a couple of Asterisk servers – definitely worth checking out.) Oxford, meanwhile, discussed the annoyances of ReiserFS following a particularly nasty data corruption problem. It is interesting that this isolated discussion occurred at around the same time a decision was made by one major Linux distribution to drop Reiser as the default root filesystem.

The Wolverhampton crowd was as noisy as usual, with many posts on a wide range of random topics. The local community is far more active than should seem logical for such a small town, but that's got a lot to do with the effects of the locally produced LUG Radio, now back for its 4th season <http://www.lugradio.org/>. If you haven't listened to the LUG Radio podcast yet, you'll probably want to check it out for yourself, since it's a great way to keep up to date with worldwide Linux issues. ■