

# Boating Tips

## FLIR®: Forward Looking Infrared

It had been a gorgeous day on Lake Tahoe. The lake was “flat-calm” and it was hot! I was cruising around the west and then the south shores all day. My ride was an 18-foot runabout bow rider. It was getting late so I decided to head north on the west shore just before dusk. I calculated the time it would take to get back to port (Sunnyside), and felt comfortable with the daylight left to make the journey safely.

What I did not count on is the sea conditions deteriorating to the point where I had to slow down for safety. This cost me valuable time. By the time I got near my destination it was pitch black. No moon, no background light, no nothing! I could see lights on the shore, but had no way of identifying what they were or how far away they were. There are numerous navigation hazards on Tahoe’s west shore and I was essentially blind, alone and in a potentially dangerous situation. But I digress...

Navigating at night is ill advised in the best of conditions. In the Bay and Delta it is particularly treacherous. This is especially true on inland waters where there are tugs with barges and other navigational hazards. Radar and GPS are essential to safely navigate at night, but there is still a piece of the puzzle missing: seeing with your own eyes.

Think about it... You can plot where you are using the GPS and you can (hopefully) identify any vessels or obstacles you are approach-



ing on radar, but you can’t physically see them. This is where the wheels fall off the train.

Thankfully, a company called FLIR® ([www.flir.com](http://www.flir.com)) has come up with an affordable product to address this serious shortcoming of the navigational tools available to recreational boaters.

## What Is Thermal Imaging?

“Infrared energy,” “thermal energy” or simply heat – they are all the same. Infrared imagers make pictures from heat, not light, detecting and displaying the tiny differences in heat energy that are



BY KEVIN O'LEARY

around all of us all the time.

Day or night, in good weather and bad, everything gives off infrared energy. What’s more, the hotter something is the more energy it gives off. Infrared imagers take this energy and make pictures of it that look like black & white TV video.

## Infra-what?

Infrared energy is part of a continuum of radiation called the electromagnetic (EM) spectrum. The EM spectrum includes gamma rays, X-rays, ultraviolet, visible light, infrared, microwaves and radio waves. The only part of the EM spectrum that we can see is the very small band called “visible light.”

When visible light bounces off something our eyes sense it, our brains interpret it, and we experience that as sight. Household cameras and camcorders work the same way: they detect reflected visible light, and their electronics create pictures we can see. Thermal imagers, on the other hand, see infrared energy that is given off by everything around us, and create images from the emitted energy. Because everything generates heat, thermal cameras can see as well at night as they can during the day. Visible light detectors (like our eyes) are not very useful at night or in poor weather

without the help of lights.

So I got in touch with the president of Commercial Vision Systems at FLIR, Mr. Andy Teich, to ask him some questions about this technology and how FLIR evolved into selling products to recreational boaters. He agreed to be interviewed. (What can I say? There's one born every day. HA!)

**Kevo:** How long has thermal imaging been around and when did FLIR get involved with it?

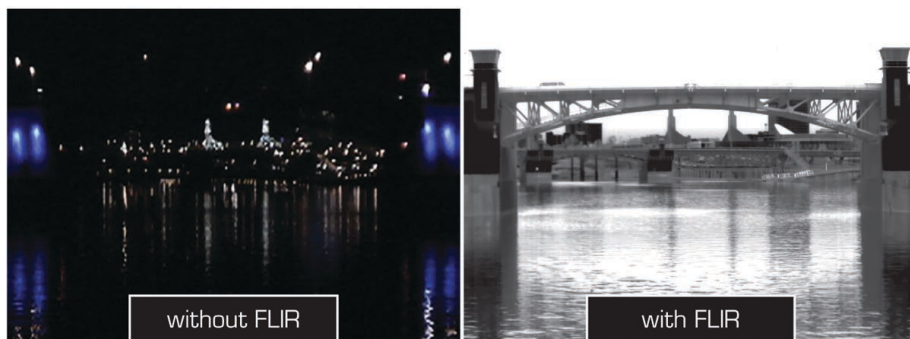
**Andy:** Thermal imaging has been around in the military since the late-'50s. FLIR got involved with it in 1965 by offering the world's first commercial infrared system. It was designed for use as a tool to find hot spots in electrical substations and perform energy audits on buildings. Today, FLIR is the world leader in commercial infrared systems with more than 100,000 units sold.

**Kevo:** What made FLIR decide to offer a product in the recreational boating market?

**Andy:** We realized that this market needs a solution to a serious problem – the lack of the ability to see when boating at night. We realized that with our volumes, vertical integration and economies of scale, we could offer a product that would be economical for the recreational boater and easy to use. If someone can watch a TV, they can use this product effectively to navigate at night.

**Kevo:** Why hasn't thermal imaging been offered in a meaningful way to boaters in the past?

**Andy:** It's really all about cost. As recently as a couple of years ago, these systems were \$50K and most boaters couldn't afford them. Today a boater can buy a system for less than \$5K. This brings these systems in-line with other marine electronics such as radar or a high-end chart plotter.



**Kevo:** Where do you see the technology going in five years?

**Andy:** Prices will continue to come down as the volumes go up. I see thermal becoming the next logical choice after GPS. After all, GPS answers the question "where am I," but only thermal imaging answers the important question of "what's out there"?

### Kevo's Tip:

Well, I got back safely that night on Lake Tahoe, but I learned my lesson. Navigating at night is serious business. Radar and GPS are indispensable tools for safe navigation at

night. I believe infrared technology will be deemed indispensable as well by the serious mariner in the (very) near future.

A client of mine just got this system installed on his new 35-foot express cruiser. I intend to go out at night with him and see for myself (excuse the pun), and test this system in real conditions with my own eyes. I'll be back with a part II on this one. HA!

Be safe & happy boating!

**As always, feedback is appreciated. I can be reached at 925/890-8428 or kevo@yachtsmanmagazine.com. ✉**

