Marc Zeitlin on EFII type systems: 9-29-17:

*“Based on the previous discussion that Mike Scovel began, I'd like to recommend something to the current builders out there.*

*One of the new ignition/injection systems out there comes from SDS:* [*http://www.sdsefi.com/*](http://www.sdsefi.com/) *(lousy website, good products) and EFII:*[*http://www.flyefii.com/*](http://www.flyefii.com/) *(better website, same good product, as it's based on the SDS system)*

*These bring our 1940's technology engines into the 1990's or maybe even the 2000's, as they are EFI and EI, with redundancy and individual cylinder control of mixture. The one downside (other than pricing - the only thing keeping me from replacing my Lightspeed ignitions and Airflow Performance FI system) is that these EFI systems requires a fuel return line. Now, if you've designed a single sump, ON-OFF fuel system with a sump that's at least 3-5 gallons, you can install a single return line to the sump and call it a day - not a huge retrofit or modification issue.*

*But for the rest of us, with relatively standard fuel systems (two tanks, two sumps, L-R-OFF valve), you'd need to have a return line that can return fuel to the tank from which you're feeding (returning to the wrong tank is a great way to pump all your fuel overboard).*

*I've been thinking about some relatively simple way of retrofitting a return line for those of us that already have a standard fuel system installed, but for those of you who are still building, I would STRONGLY suggest that you install a DUAL fuel valve (such as the Andair FS2020) and a return line from each tank to the valve. You don't need to use the second set of ports if you don't have return lines because you're using a different FI system, but if you want to use a newer EFI system (and why wouldn't you, if you haven't already purchased a carb, throttle body, or mechanical FI), you're going to need it, and you'll be happy you installed it during the build rather than having to rip things apart to retrofit later…”* [Marc J. Zeitlin](http://www.mdzeitlin.com/Marc/)    marc\_zeitlin@alum.mit.edu   <http://www.cozybuilders.org/> Copyright © 2017   [Burnside Aerospace](http://www.burnsideaerospace.com/)

**Burrall Sanders adds:***“That’s good advice, Marc. We are currently installing EFII on a fourth plane, it is a defiant, so it includes the fifth system we have installed. Installing the return lines is a major part of the job and would be much easier to do during the build.   A cozy is much easier than a Long-Ez to add the fuel lines.  WE use the Andair duplex fuel valves so to be sure to return the fuel to the tank from which it was drawn.  These are terrific systems that do indeed modernized the fuel system.”*