Raisbeck Learjet Newsletter

RADIAL

Vol. 5, No. 2, February 2010

ZR LITE: Re-contoured Trailing Edge Flaps

The heart of Raisbeck's *ZR LITE* Performance System is the Re-contoured Trailing Edge Flap that was designed to minimize the effects caused by having the engine nacelles too close to the wing. To understand how *ZR LITE* is able to achieve tremendous drag reduction benefits, it is important to understand the phenomena with which we are contending.

Due to the nozzle shape and closeness created between the wing and the engine nacelle, the air flow over the wing is squeezed into an area known as a convergent-divergent nozzle. This causes the already supersonic, local airflow inside to continue accelerating to even higher mach numbers. This in turn increases the strength of the normal shock wave that exists at the throat of this section, thus greatly increasing the overall aircraft drag.

Raisbeck's solution to the shock wave and resulting drag issue is the shape of the trailing edge flap, as shown in the pictures above and to the right. The inboard portion of the flap is reflexed upwards 6°, reducing the nozzle effect. This keeps the air flow area relatively constant, eliminating the divergent nozzle section and the further acceleration of local airflow. The result is a substantial decrease in the strength of the drag-inducing shock wave. Alleviating this condition is one of the keys to the impressive performance of *ZR LITE*.

In addition to the reflexed trailing edge, *ZR LITE* also provides a wing chord extension of nearly three inches. This chord extension and reduced drag are the primary reasons that *ZR LITE* equipped aircraft are able to gain significantly higher initial cruise altitudes than non-*ZR LITE* aircraft. Depending on conditions, the cruise altitudes are increased for 31/35/36 between 2,000 to 4,000 feet. By taking advantage of these higher initial altitudes, as well as the inherent drag reduction of *ZR LITE*, operators are banking remarkable fuel savings mission after mission—all while improving range!

By taking advantage of higher cruise altitudes, *ZR LITE* operators bank remarkable fuel savings, mission after mission.

The Raisbeck *ZR LITE* Drag Reduction System has been installed on over 100 Learjet 31/35/36 aircraft. Given the 14% or more in fuel savings, the corresponding benefits in range, the expanded operational flexibility, and the return on investment provided by *ZR LITE* every hour that you fly, year after year, it is no wonder more and more Learjet operators are choosing to fly higher, faster and farther with *ZR LITE*. ✈

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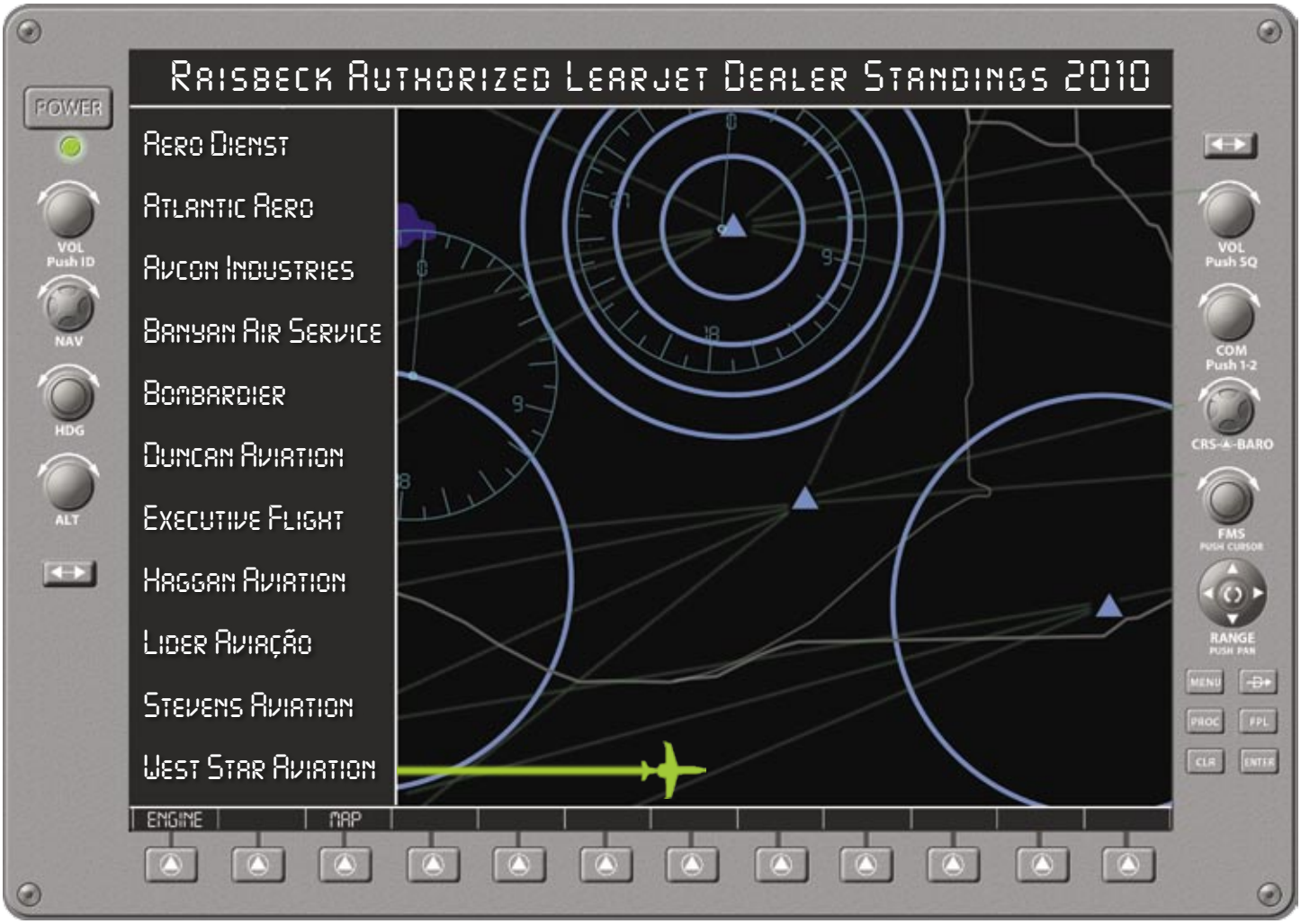

FEATURED *ZR LITE* OPERATOR

Air Medical Ltd.

Air Medical Limited recently acquired their second Lear 35. Prior to being put into service, AirMed had Raisbeck's *ZR LITE* and Aft Fuselage Locker installed by West Star Aviation in Grand Junction, Colo.

"AirMed's operations continue to expand in response to client demand. The Lear 35 enables us to offer our clients a U.K.-based alternative to continental European-sourced aircraft, which have to fly positioning legs of more than an hour. Both of our Lear 35s provide a cost effective and low emission alternative," commented Rupert Dent, AirMed's Chief Executive.

AirMed was founded over 23 years ago by Captain Rod Paris with just one PA-34 Seneca, and has since expanded to four Piper Senecas and Chieftains, along with four Piper Cheyennes, and two Lear 35s.

AirMed has developed its own EASA 145/Part M approved maintenance facility which covers their existing fleet. They are also

a Cessna authorized service facility/parts supplier specializing in the C208 Caravan. AirMed is currently in the process of adding the Lear 35 to their certificate.

We are excited that AirMed continues to expand their Lear 35 fleet and finds *ZR LITE* and the Aft Fuselage Locker an operational necessity! ✈

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