



The cost of jet fuel has always been a significant issue in the business aviation. And now more than ever the increased cost of jet fuel is causing aircraft operators to explore some creative cost savings techniques with greater urgency.

Factors Contributing to Increasing Oil Prices

Jet fuel prices are tied to underlying price changes in the oil market – changes like price fluctuations caused by a combination of supply and demand-related factors, including the state of U.S. dollar (USD) and interest rates, as well as speculation.

To be clear, global oil demand has grown, but not at a rate that suddenly has outstripped supply. In fact, there have been no significant supply shocks, although there has been a prolonged and significant depreciation of the USD against all other major currencies.

As a result of oil being a USD-denominated commodity, the value of the dollar relative to other currencies directly impacts the price of oil. And since the decline in the valuation of USD, oil producers have increased their prices to compensate for the weaker dollar.

The price of wholesale jet fuel has more than doubled since early 2007. Many analysts and economists contribute only half of oil's current price to market fundamentals, while most blame speculation to be the cause for the premium.

As the global economic climate changed primarily as a result of tightening credit markets and sagging confidence, inflation has become a growing concern in developed economies. Oil coincidentally became an accepted hedge against inflation, unlike previous periods when gold was used as the primary hedge against inflation. Along with oil's new status came an increase in the number of oil-related contracts on

organized exchanges, as well as trading popularity. Trading amongst oil-related contracts is approximately 14 times greater than current oil consumption. This imbalance between physical and paper supply and demand has created the market premium over fundamentals and supports the accusation that speculators are driving oil prices.

The relationship between oil and jet fuel prices is illustrated in the two charts below. Chart 2 demonstrates an almost 1:1 correlation in the increase in jet fuel to an increase in oil.



Chart 1: Crude Oil Lt Sweet (Nymex) July'08 delivery
Source: Dow Jones and Energy Information Administration (EIA)

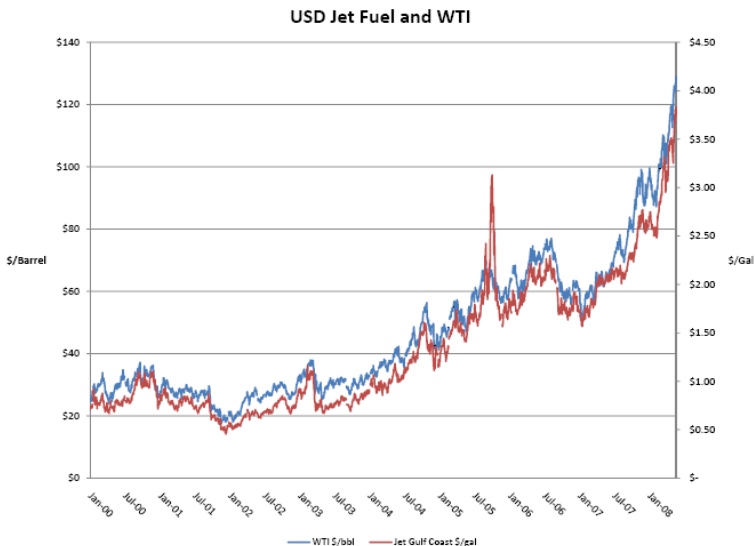


Chart 2: Jet Fuel (blue) compared to Oil (red)
Left axis oil \$/barrel, Right axis jet fuel \$/gal

The Impact of Increasing Oil Prices on Flying

Regardless of the reasons, fluctuating oil prices are impacting jet fuel prices. The challenge now is in developing creative cost savings techniques to manage the negative affects this shift in pricing has on private aircraft operators.

Table 1 below reflects the changes in cost per gallon from the year 2000 through May of 2008 for the average wholesale Gulf Coast jet fuel, also known as the price for which fuel marketing companies purchase jet fuel from a refiner. The 'in-plane' price for consumers is significantly higher than the wholesale price of compensating for transportation, marketing company fees and margins, and fixed base operators' (FBOs) margins and taxes.

	\$/gal
2000	\$0.85
2001	\$0.72
2002	\$0.69
2003	\$0.82
2004	\$1.15
2005	\$1.72
2006	\$1.92
2007	\$2.13

	\$/gal
Jan '08	\$2.60
Feb	\$2.73
Mar	\$3.12
Apr	\$3.37
May	\$3.74

Table 1: Gulf Coast Jet Fuel. Source: Energy Information Administration (EIA)

To illustrate the impact the upward trajectory in jet fuel prices is having on private and corporate aircraft operators, Table 2 below shows a side-by-side comparison of several flight profiles. The Gulfstream G-IV represents a large cabin aircraft, the Lear 60 a mid-size aircraft and the Citation V a light

jet. The associated trip profiles are based on distance flown and utilization patterns of the sample aircraft. Note that in-plane fuel prices from 2007 to 2008 have increased by approximately 45 percent.

AIRCRAFT TYPE	
'07 FUEL \$4.50/GAL	'08 FUEL \$6.50/GAL

TRIP PROFILE	
LIGHT	500NM
MID-SIZE	1,000NM
LARGE	2,000NM

LIGHT	
\$990	\$1,430

MID-SIZE	
\$2,363	\$3,413

LARGE	
\$10,741	\$15,551

Table 2: Fuel price impact as a component of direct operating cost

By example, 2007 versus 2008 'in-plane' fuel prices for light aircraft flying a 500nm leg, the price of fuel has increased from \$990 to \$1,430, an increase of approximately 45%.

Table 3 below shows the correlation of increased fuel pricing on a private aircraft's operating costs. So, for example, a light jet flying 200 hours in 2007 held a price tag of \$189,000 in direct operating costs, while in 2008 that price tag increased to \$261,300, an increase of approximately 38 percent. Overall, as a component of operating costs, fuel has contributed to a 30% increase of total costs in the past year.

ANNUAL UTILIZATION (HRS)	
LIGHT	200
MID SIZE	300
LARGE	400

LIGHT	
\$189,000	\$261,300

MID SIZE	
\$299,700	\$432,900

LARGE	
\$921,600	\$1,331,200

DIRECT OPERATING COST	
'07 \$/HR	'08 \$/HR

LIGHT	
\$1,614	\$2,061

MID SIZE	
\$1,808	\$2,252

LARGE	
\$3,516	\$4,540

Table 3: Direct Operating Cost increases Fuel, Large Cabin – GIV; Mid size – Lear 60; and Light – Citation V, Source: Conklin de Decker

What Can Be Done – Hedging?

USD, interest rates and speculation are driving the price of fuel sky high to the tune of 45 percent for in-flight fuel costs and 30 percent for direct operating costs, thus begging the question: What can be done?

Hedging is an answer for some. And though hedging can be a legitimate risk mitigation tool, it requires an appropriate infrastructure to support it. The objective of hedging is to offset cost increases with profits generated in fuel-related trading. Many private and corporate aircraft operators view hedging as speculation; ironically, not being hedged has no stigma.

Fuel hedging has been the difference between profits or losses for many airlines. The magnitude of the airlines and the volume of their fuel consumption make it easier, more commonplace and economic to hedge fuel. Many techniques and financial instruments used by airlines to hedge are available to both companies and individuals, however, contract size, margin requirements and stigma often make hedging seem too difficult and speculative for the average operator.

Despite the size of the jet fuel market it is not mainstream, and there are no kerosene or jet fuel contracts traded on organized exchanges. As a result, jet fuel is most often hedged using the heating fuel markets as a proxy.

Traded financial futures and options are available on the Nymex, Chicago Board of Trade (CBOT) and New York Stock (NYSE) exchanges. Some traded instruments that can be used in a hedging strategy include but are not limited to:

- Light Sweet Crude – futures and options
- Heating Oil – futures and options
- Crack Spreads
- Unleaded Gasoline – futures and options
- Reformulated gasoline blendstock for oxygen blending (RBOB) – futures and options
- Gulf Coast Gasoline – futures and options
- United States Oil Fund (USO) exchange traded fund

In addition to traded markets, traditional fixed price contracts, discounts and fuel programs are alternatives fixed base operators and fuel marketing companies might provide.

The Industry View

To better understand fuel management and hedging opportunities, Rick Bell, director of operations at Phoenix, Ariz.-based Swift Air, LLC (Swift), which manages and operates a fleet of corporate aircraft that includes Citation Xs, Embraer Legacys and Boeing 737s, offers his advice as an aircraft operator:

Focus on operational procedures and efficiencies.

Rick identifies a number of areas on which to focus in order to achieve fuel savings on the ground and in the air:

1. **Increase purchasing power.** Large operators are able to greatly benefit in cost savings by participating in fuel contract programs and negotiating discounts with individual FBOs. Often, aircraft owners who store their aircraft or have them managed can leverage the relationships of the FBO and its network.
2. **Use dedicated fuel planners.** Fuel planners relieve pilots from determining the service and value compromise decisions at each leg stop. The cheapest fuel doesn't always come with the best

service for the customer or flight crew. Planners are able to strike that balance, allowing the crew to focus on more essential flight details.

3. **Operate at the most fuel efficient en-route speeds** in cases where saving time is not critical to the flight. Also, request flight planning products that accomplish that goal, such as professional flight planning services.
4. **Manage in-flight altitudes.** Winds aloft are not always reflected accurately during the flight planning process. A diligent crew in flight should take advantage of favorable wind patterns and alter their plan accordingly.
5. **Use a single engine for taxiing.** Single engine operation on the ground can be easily incorporated into best practices and will achieve savings.
6. **Use ground power units (GPU) where available** and resist using auxiliary power units (APU) when possible. Keeping APUs up and running, “always on and ready” can be costly.
7. **Wash and detail your aircraft regularly** to decrease unnecessary drag.
8. **Audit your operation.** Implementing even small changes will contribute to saving fuel, as each detail adds up.
9. **Determine the importance of the flight department upon your operation.** Seek to determine whether aligning with a management company can reduce your total cost of ownership.

Many of the techniques outlined by Rick require flight crews to implement. In combination with active management support and an honest critique of operations, fuel savings can be achieved.

Conclusion

Should the price of fuel stabilize or retrace its steps to lower levels, on a historical, inflation-adjusted basis, out-of-pocket costs will remain high. Even if the speculative premiums are reduced, fuel is going to be significantly more expensive than we are used to, and until either supply increases or demand changes dramatically, we should expect high fuel prices.

While hedging sounds good, it is often just too difficult to achieve. Some flight departments that are part of large corporations that actively engage in hedging other expenses, assets or manufacturing inputs such as energy, currency and other commodities may be able to have fuel added to their corporate hedging activities and benefit as a result. But for the vast majority of operators a **best practice would be to undergo an operations audit focused of fuel management.**

In the absence of a formalized hedging program, consider a legitimate hedging strategy to be part of your mind set. Question everything. Have a purpose for your operation. Revisit why your operations manuals call for procedures to be conducted in a certain manner. Ask: Why do we fly this profile? Are there better ways to accomplish our purpose? Determine how to be more efficient without compromising safety.

In short: Everything should be on the table.

About the Author

Tom Guilfooy is a principal at Sextant Advisory, LLC, an aviation professional services firm based in Scottsdale, Ariz. Previously Mr. Guilfooy advised multi-national companies on capital markets, foreign currency and commodities risk mitigation strategies at U.S.-based and international banks.

Disclaimer

Prior to undertaking hedging programs, consult with your financial and tax advisors to determine your suitability for such an endeavor.