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## Briefing for National Training Aircraft Symposium

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# Diamond Aircraft Industries Inc.

## Briefing for

### National Training Aircraft Symposium



**March 14, 2016**

## 1) DIAMOND AIRCRAFT HIGHLIGHTS

## 2) DIAMOND UPDATES

Austro Engines

DA20-C1

DA40

DA42

DA62

Diamond Diversification

## 3) LIFE CYCLE COSTS



# Diamond Highlights

- **Undisputed Piston GA Technology Leaders**
  - All Composite Construction
  - Jet fuel piston FADEC Austro Powerplant
  - Garmin G1000
- **Lower cost Jet fuel, less flammable, lead free**
- **Superb balance of performance, control and stability**
- **Exceptional Fuel Efficiency**
  - 4 - 5 GPH DA40NG in flight training
  - 10.4 GPH Combined DA42-VI
- **“Green”** - Low noise, low fuel consumption, low emissions, no lead
- **Cost Efficient** - Overall lower cost than AVGAS aircraft
- **Best safety record** – active safety, passive safety, continuous improvement
- **Recruitment Appeal** – today and in the future



# Diamond = Flight Training

- Diamond continues to focus on global flight training market
- Diamond offers a complete fleet of aircraft models to meet any training mission (Ab-Initio through Multi-IFR)
- Proven reliability in high utilization environments (hot, cold, high alt)
- Cost Effectiveness – long term durability, high resale value, low operating cost, high fuel efficiency
- Modern designs have ramp appeal that attract student pilots
- Options for diesel or gasoline engines
- Modern technology aircraft (composites, glass cockpit, FADEC engine)



# Diamond Aircraft Models

## DA20



- Over 1,100 in service
- Spin Certified
- More than 2.5 million fleet hours
- Highest time >12,000 hours
- Lowest cost certified glass trainer
- Standard trainer of USAF

## DA40



- Over 1,800 in service
- Lycoming AVGAS
- Austro Jetfuel piston
- G1000 standard
- Proven in high utilization flight training worldwide

# Diamond Aircraft Models

## DA42



- Modern airframe, engine, avionics
- > 50% market share last 10 years
- FIKI certified
- OEI Ceiling: 18,000'
- exceptional fuel efficiency
- quiet, lead free fuel, "green"

## DA62



- 3 row 7 pax seating
- <18 gph @ >190 ktas
- Large cabin, low ops cost
- Bigger version of DA42
- Flying SUV

## All Composite Primary Structure Efficient, Safe, Tough

- Aerodynamically Efficient
- Redundant & Damage Tolerant Structure
- Integral Roll Cage – Occupant Protection
- On Condition Structural Life
- Twin Spars with Protected Al Fuel Cells





## Austro Engine AE300

### Quiet, Reliable, Smooth, Fuel Efficient

- Mercedes Benz turbo-diesel engine
- Single lever power control, like all modern turbine aircraft
- Lower Pilot workload
- FADEC; health monitoring / proactive maintenance diagnostics
- Low noise
- Lead free fuel
- Full North American Support
- 1,200 + engines delivered
- 700,000+ operating hours
- TBO Expansion:

Phase I	2009:	1,000 hrs
Phase II:	2011:	1,200 hrs
Phase III:	2012:	1,500 hrs
Phase IV:	2015:	1,800 hrs
Phase V :	pend.	2,000 hrs



# Next Generation Powerplants

**Diamond has more jet fuel piston engine experience than any OEM:**

- Jet fuel piston engine options available for over 10 years
- Over 2,400 jet fuel piston engines delivered on Diamond aircraft since 2005
- High utilization flight training operating experience worldwide (over 30 countries) in various climates (hot, cold, dry, wet, high altitude)
- Full Authority Digital Engine Controls (FADEC) – Single Lever
- 40% + lower fuel burn with lower cost jet fuel and no lead content



- DA42 launch platform for G1000, fully integrated by design
- Standard ADS-B In and Out
- Standard Electronic Stability Protection
- Garmin GFC700 AFCS - Standard
- Centrally Located Conventional Standby Instruments



# Factory Maintenance

- Factory Maintenance Organization (FAA & TC)
  - Diamond Aircraft offers direct factory engine conversion programs
    - DA40TDI and DA42TDI to Austro Engine (AE300)
  - Avionics upgrades for all Diamond models
    - Glass cockpit (G500 or G1000)
    - Garmin GFC700 Autopilots and WAAS
    - ADS-B Retrofits
  - Custom Upgrades Available
  - Annuals and Major Inspections





# Diamond Certified Pre-Owned

- Innovative factory program to buy and sell pre-owned aircraft
- Factory refurbished and customized to your specification
- Four C's of Diamond CPO Program
  - Clarity (ownership/maintenance history, clear titles, full disclosure)
  - Certification (Fresh annual/100hr, 70% life on all components, compliance with all AD's and safety related bulletins)
  - Custom Configuration (personalize to exact specs on firm pre-agreed pricing)
  - Confidence (1 year warranty and satisfaction commitment 15/15)



## DORNIER SEASTAR





# Diversification - Contract Work

- Design and Production work
  - Confidential contract work in partnership with NGC
  - Projects in work to be announced at later date

***NORTHROP GRUMMAN***

A white curved line graphic that starts below the "N" and ends below the "N" of "GRUMMAN", arching over the space between the two words.

# Life Cycle Costs

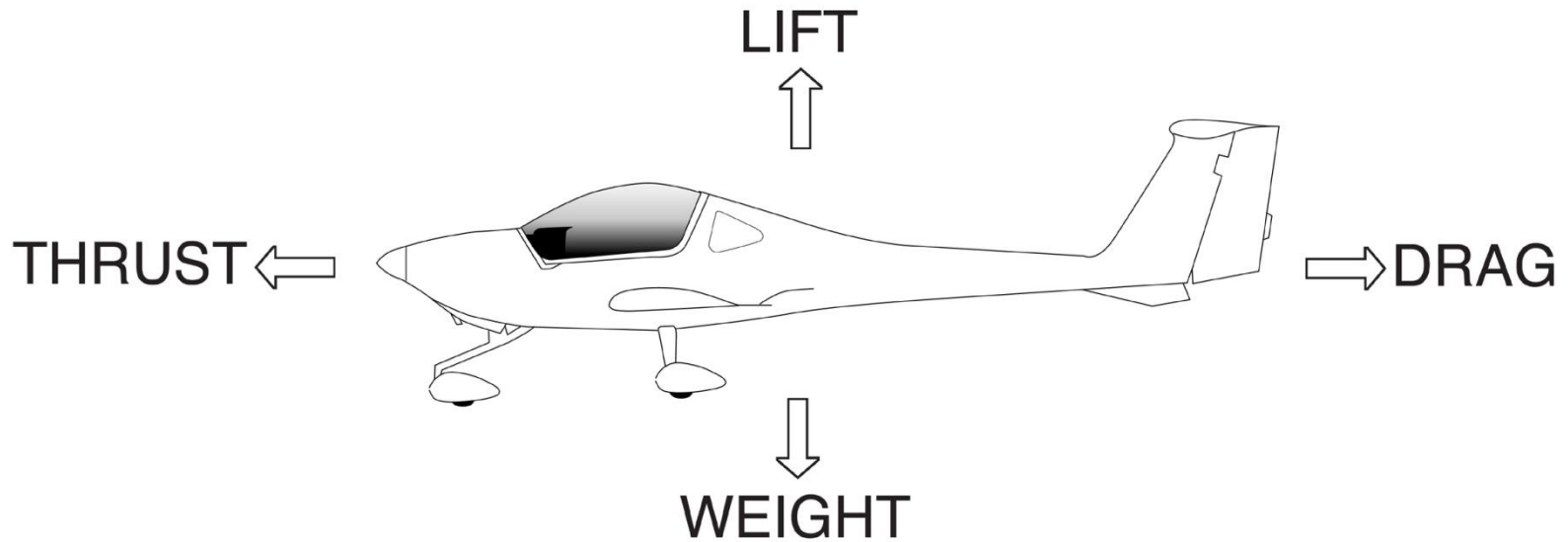
- International trend towards total life cycle cost analysis vs capital cost
- **Fuel:** Even at today's reduced prices, it is still the biggest cost driver and biggest opportunity to save. Diesel engines combined with modern aerodynamic airframes improve fuel costs significantly.
- **Insurance:** Diamond continues to have the best safety record in general aviation and this is recognized in insurance rates.
- **Maintenance:** Diamond is committed to analyzing and reducing maintenance labour and increasing inspection intervals.
- **Resale Value:** Diamond aircraft maintain high resale values worldwide





# Life Cycle Costs

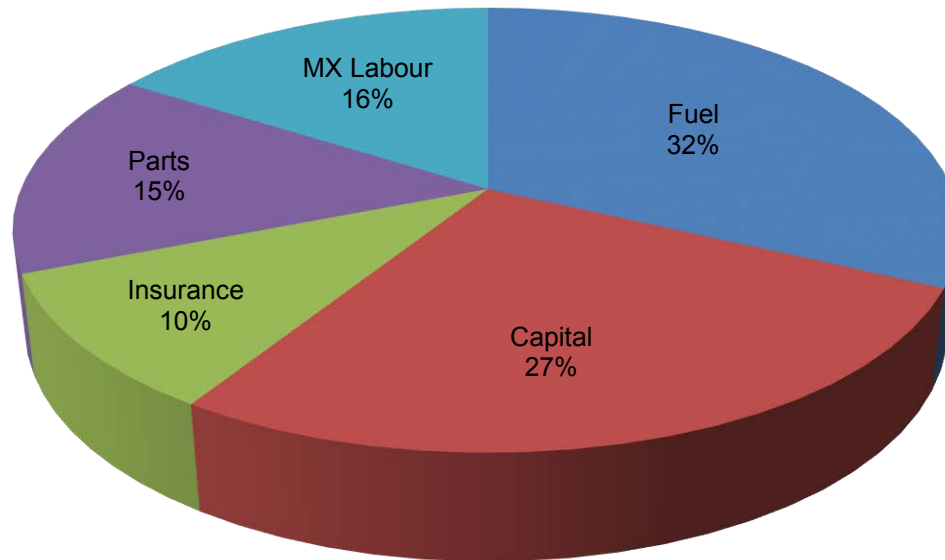
**Aerodynamic efficient airframes save money**



**High Drag = High Thrust = More Fuel = More \$\$**

# Life Cycle Costs

Typical single engine flight training airplane operating 100 hrs/ month



**Fuel is still the single biggest cost – and the single biggest opportunity to save**



# Life Cycle Costs - Fuel

**Example:** DA42-VI (Jet Fuel) vs DA42-L360 (Avgas)

**Assumptions:** Jet A \$2.70/gallon Avgas \$3.84/gallon

10 aircraft fleet, 8 years, 800 hours per year utilization

**Bottom Line: \$3.12 Million USD in Fuel Savings**





# The Diamond Fleet

The logical training fleet solution. Now and into the future.

