Engine Technologies: how will they help to develop answers to the

GENERAL AVIATION CHALLENGES AND OPPORTUNITIES

CONTINENTAL MOTORS

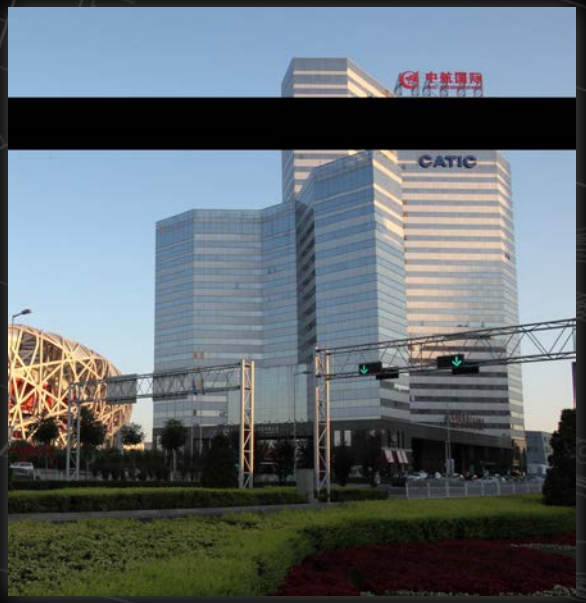
We are very honored to participate in this forum

As the leading engine manufacturer for general aviation, we would like to share a few thoughts with you today.

中航国际
AVIC INTERNATIONAL

International Aviation

Trade & Logistics



Retail & High-end Consumables

Electronic High Technology

Real Estate & Management

Development of Resources

AVIC International Acquired
Continental Motors in 2011
Centurion Aircraft Engines in 2013


CONTINENTAL
OEM
Factory Representatives
Distributors
Fleet/Training Schools
Service Centers
Main office Or production
GLOBAL PRODUCTS, SERVICES AND SUPPORT

The user induced dilemma

"This new technology looks great. But I will continue to use the older one for the time being. In a short period of time, when I'm convinced its safe and reliable, I will certainly adopt it"

That usually means 20 years !

The user induced dilemma

In other industries, the technology evolves rapidly

Users will adopt new technology without second thoughts and without delay (car, computers, video equipment etc.)

Just think of the level of equipment in your car 10, 15 and 20 years ago

Aviation is different, very different!

The user induced dilemma

Technology rate of adoption in aviation is slow, very slow…

The users (yes, you pilots!) complain about the fact that engines do not evolve

But when a technical evolution comes to the market (for instance the first FADEC controlled engine), they rush to wait for that technology to age before they adopt it

The user induced dilemma

When added to the ever rising costs of certification, this becomes a real problem for airframe, engine and avionics manufacturers

- New technology is necessary for our aircraft to evolve
- Fuel flow needs to decrease in the future
- Emissions need to decrease in the future
- Only new technology will allow us to reach these goals

The user induced dilemma

We need to accept, embrace and recognize the value of new technology applied to General Aviation

- Would you fly today with only a compass, a map and a watch ?
- But many voices are still expressing concerns about GPS, FADEC, Turbo chargers etc.
- Technology has evolved, is safe and reliable and reduces cost of flying and cost of ownership

The other Challenges of General Aviation

Airspace:

for us to fly we need equal access to the sky

Airports and airfields:

we need runways, aprons to park, terminal buildings, restaurants and cafes, mechanics, FBO’s etc.

For many of these services, we pay fees or taxes, so we create value and contribute to the success of businesses

The other Challenges of General Aviation

Consider a small country : France

Smaller than Kansas

66.6 million inhabitants

Small indeed !

But if you take a look at the economical study that was undertaken in 2013, you will see that General Aviation generates jobs, production of finished goods and contributes greatly to the economy

WITH THE SUPPORT OF DGAC

dgac

fnam

Fédération Nationale de l'Aviation Marchande

THE GENERAL AND BUSINESS AVIATION COMMISSION
OF FRENCH AVIATION INDUSTRY FEDERATION (FNAM) PUBLISHES

THE FIRST STUDY ON SOCIOECONOMIC IMPACT OF GENERAL AND BUSINESS AVIATION IN FRANCE

QUANTITATIVE AND QUALITATIVE APPROACH

40 400
Pilots of airplane (excluding student pilots)

91%
of French registered aircraft belong to General Aviation

8 100
General Aviation aircraft registered in France

68 700
licenses for non paid volunteers in aero clubs

2'054 M€
Total cumulative production*

9 650
Jobs generated directly*

1417 Aero Clubs recognized by the authorities

660 Aerodromes and airfields

1 865 000
Annual Flight hours

11 213
Micro light aircraft holding a identification card

20 900
Jobs (direct and indirect)*

4'140 M€
Total economical impact*

To these figures should be added 585 M€ generated by aeronautical manufacturing.

This document presents the major findings of a study performed in 2013 on the major impacts of General and Business Aviation in France. 2010 figures.
** Except aeronautical manufacturing*

General aviation and business is defined as any form of aviation excluding military and commercial air transport.

OCTOBER 2013

CONTINENTAL MOTORS

CONTINENTAL®

AVGAS engines

Far from being a thing of the past !

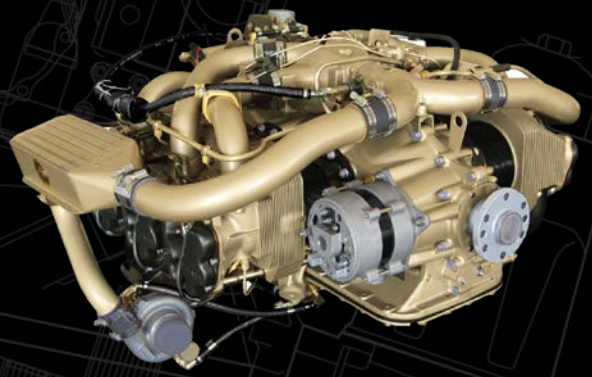
Proven technology

High reliability

Normally aspirated and Turbo versions available

FADEC versions available, currently certified

From 100 hp to 375 hp



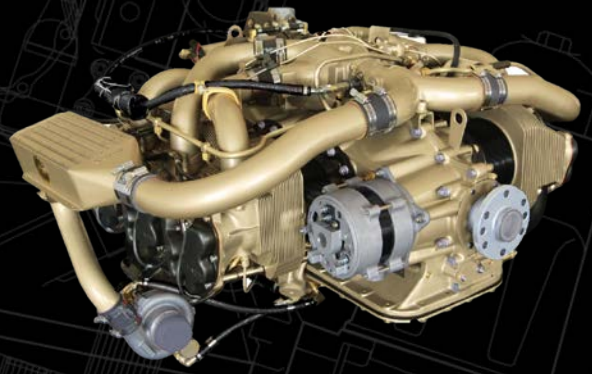
AVGAS engines

The downside to Avgas engine is fuel availability and pricing in some areas of the world

In the areas where Avgas is easily obtained, authorities want to ban it for ecological reasons, in the near future

In essence, leaded Avgas will be replaced, where it is available today, by new unleaded alternative fuels

Price will increase a bit...



Avgas in the world

To quote one of the gentleman in the room:

Worldwide production ~ 1.600.000 ton/year

In volume

< 0.5 % of automotive gasoline or

< 1/4 of automotive gasoline production evaporation

(2006 figures, it has not improved since!)

One credible alternative: Diesel engines

Because AVGAS is expensive in many countries and JetFuel is used by the airlines (availability and low price)

Better fuel efficiency (40%)

Less moving parts, lower maintenance costs

Benefits from the automotive technology and research

With more than 4000 engines delivered and more than 4 000 000 hours in flight, Diesel is a proven technology

Continental Motors is the world leader in Diesel Engines for General Aviation

Diesel Engines

Continental Motors offers a full line of Diesel engines that are certified today

Major OEMS have chosen our range of engines as the power plant of the future for General Aviation: Piper, Cessna and many others

I hope I have not been too long !

Since 1929, we are passionate about flying and providing the best engines to our clients.