Rocky Mountain Metropolitan Airport Broomfield, Colorado Vol. 3 No. 4 April, 2010

AIRWAVES

Artful Flying Presentation Inspirational

by SM Luc Moens

"Artful Flying is largely a process of 'new awareness,' yet it is a process that is very old. Native American and Asian civilizations discovered this awareness thousands of years ago."

Artful Flying

In contrast to the technical talks we usually hear, Michael Maya Charles' presentation at the March squadron meeting was mostly inspirational. His theme was not so much about flying or teaching new techniques as I initially expected, but rather it was about looking inside ourselves to dig out a desire always to learn new things and continuously to improve. Charles' contention is that artful flying is all about being in pursuit of a lifetime of excellence, while realizing that perfection is just an elusive point somewhere in the future that one can never really attain. It's the progressive realization of success along the way toward excellence that really counts. It requires that each of us develops a mindset of wanting to learn from others. He emphasized that "A teacher is someone who knows one more thing than I do. That's why I always open myself up to learning from others."

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Photos by 2Lt Arif Gezalov

Author, Michael Maya Charles, demonstrates artful flying comparing the skills of flying to creating music. artful flying is the pursuit of the ever-elusive excellence, always just beyond attainment.

Charles opened his presentation by playing a short piece by Bach as an introduction to make us understand that learning artful flying is like learning how to play a musical instrument. It takes consistent practice, and it is a discovery of oneself as the skill level increases over time. Of course, it takes discipline. He said that it is the discipline that helps us focus, whereupon he quoted a friend who said, "Discipline is just remembering what we love." That really hit me in the guts!

You can only imagine my amazement when he mentioned YoYo Ma during his discourse on the "art of music," which, incidentally, is one of the early chapters in his book.

"Although the ancients understood the power of awareness, it is only recently that we have discovered the importance and application of these simple, ancient ways in our lives," said Charles. "Awareness has found its way into the latest 'new' business techniques involving the Tao de Ching; into an Olympic athlete's connection with her sport, visualizing her success and focusing both mind and muscles on a seemingly unattainable human goal," he said."

Awareness and visualization," he added, "are also part of our relatively recent discovery of meditation, Tai Chi, kung fu and the many other eastern disciplines that have found new homes in the West."

"In flying," he said, "wisdom is more important than experience." It's more important always to seek wisdom. He spoke about the plane crash in Buffalo last year and how the human factor was the cause. He accused the "system" of not paying attention to potential inherent flaws in a pilot, but focusing solely on track record and experience. If the pilot is not "fixed," then trouble is just around the corner. In my view, his point clearly alluded to the issue of "rogue" pilots and what causes people to make errors.

> But here's a secret that's fully grasped only in the doing: The more involved we become in our art, the more we open ourselves to new learning; the more we learn, the more we grow—and the greater the rewards. Finally, through our long-term practice, we find deeper meaning and enrichment."

In his book, Charles likens flying to other creative endeavors. "[Like] golf, sculpting, music, marksmanship and many other artistic pursuits, flying allows the participant to involve himself as much or as little as he wishes. It is a magical mixture of left-brain-rational and right-brain-artistic, the perfect stage to blend technology with the art of ageless wisdom.

I was quite taken by this particular presentation, not only because of the mindset of continuous self-improvement in flying--something that Charles admitted is sometimes hard to find among pilots who often have big egos--but also because of the "moral of the story," which was that we should apply that self-improvement principle in all areas of our lives. ❦

Artful Flying, ISBN 0-9768274-0-9
6" x 9" Hardcover, 332 pages
Foreword by Rod Machado

Touch and Go Day at Air Park Elite Was Historical and Fun!

By Captain Patricia Sargent

As Jeffco squadron has no cadets, this PAO took the opportunity to assist Lt Col Randall Carlson in documenting his Broomfield Cadet Squadron's Touch and Go, TAG, day, which was held at Elite Airpark, March 13. Cadets got more than they bargained for as they not only got to fly the model planes but also had the unique opportunity to meet a real participant who played an important role in World War II.

Under a bright, late-winter Colorado sky, a score of cadets from the Broomfield Cadet Squadron scurried out of the squadron van and the local parental caravan eager to fly miniature airplanes. However, more than one treat awaited them that day. They had the thrill of meeting a real P-38 pilot who talked to them about the ups and downs of handling the the new prototypes of a military aircraft that was destined for fame in WWII. The nonagenarian's stories of maneuvering the new craft fascinated them as he talked about the gears and gadgets so new to the fledgling pilots of the pursuit aircraft in the war.

Photo and description details courtesy of Wikipedia

He told them that the P-38 Lightning was a complete break-away from conventional airframe design, power, and armament. It had twice the power of other planes and was nearly twice the size. With its four .50 calibre machine guns plus a 20 mm cannon, it had enough firepower to sink a ship--and it did! The pursuit plane was famous particularly in the Pacific War Theatre of Operations. Maj Rice held rapt attention as he told how the P-38

Cadets surround Maj Bill Rice who talked about the opportunities to pilot a brand new "secret weapon."

Photos by Capt P.D. Sargent

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was the Army's dream plane. More excitement was to come.

Sponsoring the Touch 'and Go Day was Tom Neff, President of Airpark Elite Radio Control Club. The purpose for the club's invitation to the Broomfield Cadet Squadron to participate in the Radio Control experience was to further cadet understanding of aerospace and its opportunities. Meeting Maj Rice was a journey into the proud past of aerospace; learning about radio controlled model airplanes was a journey into the present. Learning about the P-38 was fascinating and serious, working with the model planes was sheer fun! Everyone got a turn at the helm, and cameras were working overtime. Lt Col Randall Carlson brings the squadron out to Air Park Elite frequently as part of his Aerospace Education program.

Brian Neff,, his giant Yak, and cadet enthusiasts.

Preliminary explanation about fuel and ignition

Radio control is strictly a hands-on activity. Members of Airpark explained the flight mechanism of radio control, modeled flight procedures, and turned the flight over to the eager hands of the cadets.

In periodic Air Flight Competitions, cadets often help the club marshal traffic, greet guests, and watch the air battles flown by the pros.

Members of the Airpark Elite club are enthusiasts, many of whom have

flown much larger craft in much more challenging events. Neff said, "Duane Gall was teaching a cadet, burning fuel and twisting up some air, but most importantly training a new young pilot. This is quite a change of environment for Duane," he said, "as he is used to flying the planes at 150 mph around a set of pylons." Neff noted another member, Alan Thorvso, who is used to chasing or avoiding getting his streamer stolen in competition combat.

Neff himself has won international acclaim with his own flying skills. Having flown in competition since 1981, he has consistently won top ranks. In 2006, he won the Nationals in combat in Muncie, Indiana, and every year since 2001 he has won the Colorado Competition Society's "Topgun" award. Neff has flown radio controlled craft in competitions throughout the state as well as in other states. He even competed in an invitational in Russia.

After several hours of flying, Airpark provided pizza for everyone. Understanding teens very well, Janis Neff earned appreciative glances as she brought in ample pizza, water, and soft drinks for the crowd.

Following lunch, Brian Neff put on a 3D air show with his giant scale Yak, *see photo page 4*, that was truly amazing. The cadets watched in awe at the snap rolls on take off, hovering one foot off the deck, and inverted flat spins just kept on coming. This demonstration showed that only with practice could one become competent pilots. "It's not as easy as it looks," said Neff. Ending the afternoon with no broken planes, the group burned up two gallons of fuel and broke only one prop and two landing gear screws. In all, it was a happy ending to an exciting day. ❦

√ MARK YOUR CALENDAR

APRIL
14 Group II Squadron ES Officers, Longmont
17 Spring Weather Hazards Seminar **
23-25 COWG SAREX at BJC
30 Apr--May 2: USAF CAP Compliance Inspection

MAY
1 Jeffco Squadron Air Crew Clinic
8 Photo Clinic, TBA
8-9 Plans Section Chief Class, TBA
22-23 Wing Conference, Colorado Springs

JUNE
19 Summer Weather Hazards Seminar**

JULY
10-25 Glider Academy, TBA
16-18 CSRB Conference
16-18 Colorado SAR Conference, Gunnison, Contact Leonard Ginther
17-25 Region Staff College
23-25 Pilot Survival. GSAR
23-31 GSAR Academy, Gore Pass area

AUGUST
21 Aviation Weather Decoded Seminar **
27-29 RMMA / BJC Air Show

SEPTEMBER
11-12 Communication Unit Leader Class, TBA

OCTOBER
16 Winter Weather Hazards Seminar **

DECEMBER
8 Mountain Flying Seminar **

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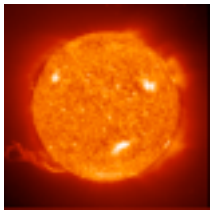
** *Independence Aviation 303.858.1600*

Colorado Pilots Association, CPA, has

Search for Alternative Technologies

Aviation Fuels II: Is Your Tank Green Yet?



by SM Luc Moens

In the first article of this series on fuels, Airwaves February. 2010, I pointed out the challenges associated with the use of petroleum, crude oil, for the production of liquid transportation fuels. These challenges include the global competition for crude oil from emerging economies in Asia, continued political tensions with several unfriendly OPEC countries, the environmental impact of burning fossil fuels in terms of climate change, and the fact that fossil energy resources such as petroleum are not naturally replenished and will therefore be depleted at some point in the future.

This 'perfect storm' has prompted most of the oil-consuming countries to search actively for alternative technologies that can provide liquid transportation fuels. In the United States, Europe, and Asia, petroleum is used as the raw feedstock in refineries to produce liquid fuels, *e.g,* gasoline, diesel and jet fuel, and the technologies used in refineries have matured over a period that has covered most of the 20th century. Alternatively, coal can be used to produce liquid fuels, but those processes are very expensive and capital intensive, and require considerable governmental subsidies to make them commercially viable.

The lack of petroleum in Nazi Germany as well as the oil embargo imposed against the South African 'Apartheid' regime forced these countries to invest heavily in what became known as the 'coal-to-liquid' process that became their only source of liquid transportation fuel. South Africa became thereby self-sufficient in its production of diesel and jet fuels. To this day, it continues to sustain its aviation fuel supply in this way, even though it comes at a high cost in the form of heavy government subsidies. Because of the vast coal reserves that are available in the United States, large oil companies have explored the possible application of the 'coal-to-liquid' process as an alternative to using petroleum, but these efforts have not been proven commercially viable.

Hence, in the United States coal is still primarily used for creating electricity. In spite of the often acrimonious and mostly politically driven debates about climate change, several big oil companies and branches of our military are investing in research and development projects for the conversion of 'biomass' as a renewable feedstock for producing liquid fuels. The overall outcome that is envisioned is the sustainable production of transportation fuels without having to worry about supply problems.

To better understand what these biomass-derived fuels are, we need to first remember that even fossil resources such as petroleum, coal and natural gas are derived from plant material, or what is now generally called 'biomass'. Hundreds of millions of years ago, those plants used sunlight as an energy source--solar energy, together with water and carbon dioxide, CO_2, as a carbon source from the atmosphere to build up their cell material.

It is a process known as *photosynthesis*, and is still used by all plants today. The decay of all these various forms of plant material under high temperatures and pressures within the Earth's crust over hundreds of millions of years, turned the plant material into liquids (petroleum), solids (coal), and gases (natural gas). The wide variety of original plant species, as well as their geographic distribution, may explain why there exist so many different types of petroleum, coal and natural gas.

The enormous amount of scientific research that has focused on petroleum and coal over the past century, has led to the conclusion that algae were the plant-like organisms from which petroleum was formed, while coal was formed from higher plant species such as trees, bushes, grasses and the like. Most algae are microscopically small organisms composed of green-colored plant cells that grow rampant in pools of stagnant water (better known as 'pond scum').

Algae grown in the lab

Like all plants, algae build up their cell material using water and CO_2, using sunlight as the energy source (again, *photosynthesis*), but they are also very good at storing excess energy in the form of oils that resemble vegetable oils. Depending on the species of algae, the production of oil by a cell can surpass more than half of the cell mass, and is quite impressive considering that the oil accumulates inside the cell without bursting the cell wall.

There is now considerable scientific evidence that petroleum was formed from enormous masses of decaying algae, whereby all the cell material and the oils were subjected to many chemical reactions in under-ground layers. The end result is a complex, black, oily or tar-like material that we now call petroleum, which literally means, "oil from rocks."

In the next article in this series, I will discuss why algae are now becoming important as a feedstock for biofuels, and how this ties into the current efforts by the research community in the United States to create new sustainable supplies of jet fuels.

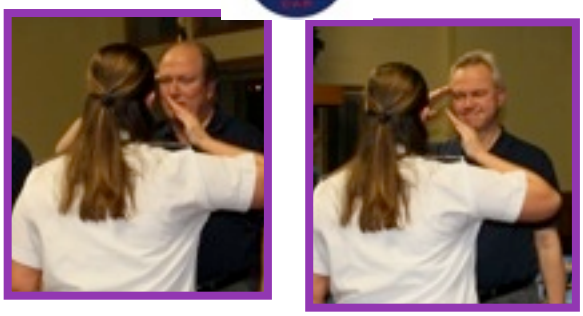
While this world of fuel research is fascinating, it also carries many challenges for the scientific and engineering community that must be overcome before we can use algae as a source of renewable fuels. It may be a while before your tank is green.

Luc Moens, member of PAO team of the Jeffco Squadron, is a Senior Research Scientist (Chemist) at the National Renewable Energy Laboratory in Golden, Colorado. Aside from being actively engaged in biofuel research, he also enjoys educating the wider public about the ongoing R&D. He can be contacted at lucmo@msn.com

PROMOTION

Squadron Meeting Photos by Arif Gezalov

Capt Kauffman presents the Captain promotion to Jeremy Sing



Having completed requirements, Senior Members Jonathan Thorne, Joe Dunigan, Charles Dickinson, and Luc Moens finished ground school to qualify for Mission Scanner.

CAPT BENSON EARNS TWO AWARDS

Capt Tom Benson's progress in the Finance Track helped him earn Level II, Technician, and Level III, Senior Rating. On completion of Level II, he has earned the Benjamin O. Davis Jr Award.

Completion of the Level III earned him the Grover Loening Award. Both achievements include a certificate and a ribbon.

Capt Benson has been a member of the Jeffco squadron since July 28, 2004 and has served in many capacities. His specialty has been in area of Finance. In the recent Evaluated SAREX, his work in Finance was judged Excellent.

Capt Kauffman confers a ribbon and a certificate for each of the two Levels Capt Benson has earned.

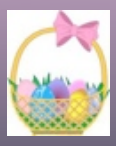
TESTS

Highly Recommended is Operational Risk Management Test

http://www.capmembers.com/safety/orm_training.cfm

Required is the Equal Opportunities test!

http://tests.cap.af.mil/EO_Training/Index.cfm



WHY NOT TAKE THEM BOTH TODAY?

Paul Luthy Takes Command of Broomfield Cadet Squadron

1st Lt Paul Luthy, New Commander of the Broomfield Composite Squadron

In a Change of Command ceremony Tuesday, April 6, 1st Lt Paul Luthy became Commander of the Broomfield Composite Squadron replacing popular out-going commander, Lt Col Randall Carlson, who has held the position for the past three years.

"For some time,"Paul said, "I have sat in the back of the room while my daughter participated as a cadet." When Lt Col Carlson announced he was leaving the state, several people approached Paul to step up to the plate. Paul "knows the ropes" they said. Paul is a man whose mission is to help. After 9-11, he looked around to see what he could do for his nation.

Paul's personal ethics and love of flying culminated in a service that he could render. "After the events of 9-11, I wanted to do whatever I could to help our state be protected and prepared," he said. "I found that in the Civil Air Patrol I could both help my community and further my aviation desire." Paul joined the Jeffco squadron in 2003, and for the past three years has been in Crew Chief.

A devoted family man, Paul makes working with young people the top of his priority list. "The thing most enjoyable is giving O-rides to young enthusiastic kids," he said when he was interviewed for the February *Airwaves*.

Now that he has been tapped to command the Broomfield Composite squadron, Paul's mission is to serve his family, his community, and his nation. ❦

Photo by 1st Lt Lisa Sowell, Broomfield Composite Squadron PAO

Maj Lord and Lt Col Randall seem to ask if 1st Lt Luthy was nervous. His gesture seems to imply, "just a wee bit."

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Bruce Hertelendy
Joe Morales
Bryan Raley
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Robert Schmid
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2ND LT ARIF GEZALOV

With experience and focus, Arif shoots outstanding pictures of special events, meeting, SAREXs, and Civil Patrol life in general. He shot nearly 50 photos of the March squadron meeting to get people's "best side." We chose the most appropriate.

Please see his photos on page 8.

STAFF WRITERS

2ND LT LUC MOENS

A Senior Research Scientist, Chemist, at the NREL, located in Golden, Dr. Moens is actively engaged in biofuel research. He enjoys educating the public about ongoing R&D. Please see his second article on bio fuels, page 2.

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CAPT P.D. SARGENT

PAO team leader, Dr. Sargent is responsible for the design and format of the newsletter.

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Thanks also to proofreaders
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