

CPA FLIGHT LINES

Volume 23, No. 7

July 2006



B-17 Along the Foothills, photograph courtesy of John Martyny

“...\$350 for an airplane ride, not in my pocketbook...

*I got to thinking more about the chance for a ride in a B-17
and I began to wonder if I had made a good decision.”*

The Aluminum Overcast - B17 Bomber
is truly a piece of history, these bombers are quickly
disappearing from the flying scene.

See article on page 9



www.ColoradoPilots.org

President's Message

by CPA President Bart Jones



The Colorado Pilots Association, with 700 members is an organization that can speak

with strength. Beyond that, three of our members have been extremely active on our behalf during the past Colorado Legislative session – Senator Lew Entz, Bill Hamilton, and Gary Tobey. They report that the big issue for CPA was SB138, which mandated additives that could have had a negative impact on unleaded fuels (mogas) used in aviation. Senator Entz succeeded in amending the bill to keep those additives out of fuels used in aviation. The bill was ultimately vetoed for other reasons so mogas will not be affected in any event.

Nevertheless a special thanks is due to Senator Entz for being alert to this issue and moving to protect the

interests of aviation regardless of the outcome.

Another impact of our large membership is surfacing, the latest info on airports, great airstrip cafes, FBO's that go beyond normal limits to give you special service, places with lowest fuel costs, and so on. There are dedicated people providing these airport services that deserve to be recognized. Now we are asking for **YOUR INPUT** to let us know of your favorite place and why or what they have done that ought to be recognized. From your nominations we invite the top winners to our annual CPA membership meeting to be honored with a plaque and special recognition from all of us.

Please send your nomination to Bruce Hulley, at 1619 Bahama St, Aurora, CO 80011 or email: 73555.1544@compuserve.com.

Bart

“Concerning Learning” FREE LUNCH and possible FREE 1 YEAR MEMBERSHIP

*Do you have a flying story with a lesson?
Tell it to interviewer Dean Jaros over lunch or a
late afternoon drink. (Dean picks up the tab)*

If the story is accepted for publication in CPA *Flight Lines*, your membership in CPA will be extended and free for one year.

E-mail Dean at jarosd@digis.net or call him 970 686-1233

Colorado Pilots Association (CPA)

August 19, 2006

Centennial Airport (APA) Colorado

Tower Boardroom 8:30 am to 5:00 pm

Fee: \$120 CPA members, \$145 nonmembers
fee includes course materials.

Mountain Flying & High Elevation Airport Operations Ground School

This course is designed to prepare pilots for flight
over mountainous terrain with takeoffs and landings
at high elevation airports.

The History of the Mountain Flying Program for CPA, by Vern Foster

Twenty years ago Bruce Hulley and I taught the first mountain flying program. Bruce taught ground school - about a 3 hour session using whatever materials he could scrape up, C.A.P., materials, etc. I rounded up the flight instructors and taught the operations end. It was wild. Fortunately no-one was killed. That showed us that we needed a more business like operation. We rapidly sorted out some of the least desirable instructors and tightened things up a bit. Then in the winter of '90 and '91 I wrote the first draft of the text we now use. *The Policy and Procedures Manual* followed.

The program has been enhanced over the years through the efforts and expertise of Robert Henley, Bill Marshall, Bill Standerfer, Brian Lewis, Brian Jones, Bruce Hulley, Bill Dunn and by input from various other instructors.

It is very gratifying to see the results of this ongoing team effort.

Vern



Aftermath of the big storm at Oshkosh. Photo bob Kinney

Preparedness, Pilotage, and Pleasure: The Oshkosh Experience

By Bob Kinney as told to Dean Jaros © Dean Jaros

All my flying life I have wanted to go to Oshkosh. It is often said that one is not really a pilot until he / she has flown into Wittman field for this greatest of all fly-ins. I wanted to see this extravaganza. I wanted the challenge!

At long last, in 2005, our schedule would permit us to go. We began our preparations early on. Of course we had heard of the huge numbers of airplanes (over 10,000 in the course of a week) that crowd the traffic patterns. Some of our friends were Oshkosh veterans, so we asked them what it was really like. Wisely, they advised us, as first-time attendees, to plan an early arrival. We should get there before the great first day aerial traffic jam, and of course well before the likely afternoon thunderstorms.

So, on Saturday, we planned a 4:30 a.m. departure from Jeffco. Our Bonanza was

in top shape. We had determined our route and fuel stop carefully. The weather looked good for a VFR trip to Wisconsin. We arrived at the airport in the pre-dawn darkness confident we had a good plan.

Then things started to unravel. As we stepped into the hangar, we were stunned to see that the plane was gone. How could this be? We had planned so carefully. Months before, we had arranged our Oshkosh schedule with our ownership partner, Bob. He knew perfectly well the plane was ours for the next five days. We must call Bob. No answer at his home. We do not have his cell phone number with us. We gnash our teeth. We must return home to find the number. It is now more than an hour after our scheduled departure time. No answer on his cell phone. We gnash our teeth some more. We return to the airport. More calls. Eventually Bob, in Alamosa with

the plane, answers. He had forgotten. With much embarrassment, he immediately flies back to Jeffco. We load the plane, top off the tanks, and prepare for departure, now six hours later than we had planned. It looks like we will have to face Oshkosh arrival traffic after all.

Though we were a little anxious, the early part of the flight was basically routine. But then Flight Watch reported that OSH had gone IFR in heavy rain. Would it clear in time for us to land before the 8 p.m. airport closing? Prairie du Chien WI, our fuel stop, was well west of the bad weather, so we landed without incident. To our amazement, the airport was crowded with airplanes, about thirty, all from western states it turned out, and all bound for OSH. Like us, their owners and pilots were all anxiously waiting out the weather hoping to arrive before airport closing.

We all paced back and forth and watched on-line weather. Eventually OSH showed signs of clearing.

We rushed to our planes and, like a cloud of gnats bunched closely together, flew east.

The closer we got to OSH, the more crowded the skies became. I had never experienced anything like it. Stories of the hordes that descend on Wittman Field are not exaggerated! Procedures for arriving at OSH are necessarily a little complicated. From the west, there is a VFR "approach fix" at a place called Fisk, identified by a strobe light on the ground. From this point, controllers sequence the various planes into the

landing pattern at OSH. Prior to crossing Fisk, planes are usually assigned to a holding pattern defined by the shores of a prominent lake. Today, the lake holding pattern was completely full and we were assigned to a secondary holding pattern over two other lakes! Here we spent an hour and a quarter going round and round at ninety knots. In a Bonanza, that takes some careful flying.

We were very close to other airplanes and I was glad Shawn was with me to help keep track of them all. Watching, listening, and trying to avoid making any mistake, made for a pretty tense time. There were scary moments, occasionally, through either mistake or arrogance, someone would roar by at a speed way over 90 kts. and perhaps only 50 ft (*really!*) away. But by and large, it was an orderly procedure. Indeed, we did get to OSH before closing. Eventually we found our selves on final along with three other planes at the same time. Each of us had different instructions as to how far down the runway we should land. It worked for two of us. The third crashed upside down on the runway causing serious injuries to the pilot. Of course, this closed the runway and further delayed the unlucky pilots who were assigned positions behind him.

Clearly, this was exceptional traffic even for day-one of Oshkosh. What had happened? First, the situation at Prairie du Chien had been repeated many times over. Bad weather at OSH had backed up, for several hours as it turned out, traffic coming from all points of the

Oshdosh Experience cont. from page 5

compass. Once the weather cleared, everyone made a mad rush to get to OSH before airport closure. Traffic was at least triple that which it would have been without the long, weather related back-up. In addition, purely by chance, two massed flights of planes, the Bonanzas and Mooneys to Oshkosh, arrived near OSH at the same time. Their big formations got traffic priority, significantly adding to everyone else's holding-pattern time. Controllers acknowledged that on this afternoon Oshkosh had the heaviest traffic in its history.

I won't even attempt to describe the delights of Oshkosh. The EAA museum, the air shows, the commercial booths, walking the flight-line, making new friends in the fly-in campground, make-up the experience of a life-time. We enjoyed it thoroughly.

But there was yet a trial in store for us. On Monday, record temperatures topped 100 degrees and the humidity was high, perfect conditions for the severe afternoon and evening thunderstorms typical of the Midwest. As we were at dinner Monday, a mega-storm came through. The wind noise was terrific and the downpour was unbelievable. Protected from the worst of it by the restaurant tent, we were astonished on our return to see our campground completely flattened under 3" of rain. Only a few tents were left standing. Meteorologists later described the storm as the worst to hit the area in over fifteen years.

The next few hours were a time of helping one another. We bailed water out

of tents. We re-pitched other tents. We repaired tents. We helped people carry the remains of totally demolished tents to the dumpster. It was a true mess. Our own tent was completely awash and our sleeping bags were soaked. Later we discovered that damp-sleeping was impossible. We spent a good part of the night trying to doze in the uncomfortable but dry seats of the Bonanza.

Our living arrangements may have been dampened, but not our spirits. We had two more wonderful days at Oshkosh before an uneventful flight home.

Besides providing us with a lot of fun, our Oshkosh experience generated a lot of food for thought. For one thing, the old adage, "If something can go wrong, it will," was proved once again. Of course careful planning should precede every flight. But we need to be prepared with an alternate if the first plan doesn't work out. Fortunately, by listening to our friends, we had grasped the basics of the special high-density traffic procedures at Oshkosh. When early arrival didn't work out, we had an option, albeit a less desirable and more difficult one. And if that hadn't worked out, we could have stayed over night at Prairie du Chein, even less desirable to be sure, but at least an option.

Second, it is good to accept challenges. By this I do not mean to do dangerous and foolhardy things. But it is possible even for us pilots to get into a rut. We go the same places, fly the same routes, and deal with the same traffic patterns at the same airports. Occasionally, it is wise to exercise skills that we don't use very

often. It builds confidence and let's us know we are ready for new adventures. To me, the very tight holding patterns, rapid-fire instructions, and three planes on final to the same runway at the same time, though at first a little frightening,

were actually very broadening. I am a better pilot for it.

Oshkosh does this for one. Great fun, and broadening challenge in one package. I am ready to go back again this year.

As told to Dean

July 2006 Factoid Question:

How many wings are enough? All of us have experience with mono-planes and many, at least through reading and photographs, are familiar with biplanes as well. However, in the early history of aviation, there were craft with three or even more wings. Why were such airplanes developed? What is their record of success and failure?

To find the answer see page 14.

Position Available Chief Pilot

**Aspen Flying Club, located at
Centennial Airport, has an opening
for a Chief Pilot. We have been in
business for 30 years, and at present,
we have 33 aircraft and 625 members.
The Chief Pilot will manage flight
operations and supervise
approximately 35 CFIs.**

Call Larry Ramsdell at 303-799-6794.



Fly Mart



For Sale:

Baron 55 (1961) TT4900±

Recent annual: no cracks, new elevator, Cleveland brakes
OH. R Eng. 700 SOH. Needs L Eng. OH to be airworthy,
glass and paint to be gorgeous. 800 pound payload w/136 gal useable.
Cruise 180 KTAS @ 23 gph. Recent interior w/5 seats, O₂, alcohol props,
late nose, NDH. KNS80, NARCO DGO10 non-slaved HSI, KY197,
KMA20, Escort II, AT50A, PS1000 intercom. Great trainer, time builder,
traveler. \$45,000 obo. tpvxinc@mindspring.com

For Sale: 1980 Cessna 172N

Dual Nav/Comms including King KLX-135A VFR GPS
with moving map, Loc/GS, ADF, MB, & 4-place intercom
160 hp Lycoming engine with 2434 hrs since factory overhaul.
Compressions 78/74/76/78 - Runs Solid. Airframe 4554 total hrs.
Blue/white exterior is a '9' and blue interior is an '8' on a scale
of '10'. Asking \$49,900. **Must sell, 3V5 airport is closing.**
Contact Mike or Maria Myshatyn at (970) 219-1560

For Sale: 1995 Maule MX-7-180A

A clean, well maintained, go-anywhere low time VFR beauty.
NDH, one owner and always hangared in high altitude dry climate.
Based at FTG. Current Maule list price is \$133,200.
I'm asking \$81,000. Contact Jack Buschmann
at [<buschfolk@earthlink.net>](mailto:buschfolk@earthlink.net) or (303) 321-7859 for more details.

Rent All or Part: Hangar at Jeffco

50' X 50' footprint plus 800 sq ft loft
Heated 3/4 bath, spigot for washing aircraft
Telephone and hi speed lines Contact Gloria Baltz
(303) 478-9619 gbaltz@mindspring.com



Fly Mart is a free service provided only for CPA members.

If you have a personal AVIATION related item to list,
please submit the ad to the *Flight Lines* editors:

Beverly or Carl Boecher, via email to N34552@wisptel.net.

Deadline is the 15th of each month, to appear in the following month.
Your ad will run only once unless you contact an editor prior to the 15th
of the following month and request the ad to run again.

Aluminum Overcast, *by John Martyny*



The interior of the EAA's restored B-17, photograph courtesy of John Martyny

It all started about two years ago when, while landing at Cheyenne after doing a number of approaches, we noticed that there was a B-17 parked on the tarmac. We asked the ground controller what the aircraft was doing there and he said that the EAA was giving rides in their B-17, Aluminum Overcast. He also indicated that the rides were about \$350 or so. I immediately thought, \$350 for an airplane ride, not in my pocketbook. Months later, I got to thinking more about the chance for a ride in a B-17 and I began to wonder if I had made a good decision.

The Boeing B-17 "Flying Fortress" was the workhorse of the European Theater of Operations during WWII. The Eighth Air Force flew countless missions, lasting more than eight hours, on targets

way behind enemy lines. It was one of the most modern long-range bombers at the time; and some flights would darken the sky and fill the air with the sound of the four 1,200 horsepower Wright Cyclone engines. Those who were there said it was a sight to behold. Between 1935 and 1945, a total of 12,732 B-17's were produced. A total of 4,735 were lost during combat and shortly after the war many were reduced to scrap with the advent of jet airplanes. Today, fewer than 100 airframes still exist and fewer than 12 are airworthy.

Aluminum Overcast is the B-17G owned by the EAA. It was delivered to the military on 5/18/45 and had a crew of 10. It had a range of 1850 miles and could carry 1700 gallons of fuel without

Aluminum Overcast cont. from page 9

any spare tanks. The basic empty weight was 34,000 pounds and the wartime gross weight was 65,500 pounds. The normal bomb load was 8,000 pounds but for a short-range run it could carry as much as 17,600 pounds. Aluminum Overcast never saw action, and it was purchased from the military for \$750 in 1946. In 1978 investors who wanted to preserve the heritage of the B-17 purchased it. The difficulty of maintaining a vintage bomber prompted its donation to the EAA in 1983. The restoration of Aluminum Overcast has taken more than 10 years and thousands of hours by staff and volunteers at EAA. The B-17 and Aluminum Overcast is truly a piece of history that is quickly disappearing from the scene. The ability to continue to fly these aircraft will only diminish over time (*at least that is why I told my wife I wanted to fly in the B-17 the next time it came to Denver*).

So here I was flying to Centennial Airport at 8:00 am on a Friday morning. As we turned final at Cherry Creek Reservoir, the tower said "you are going to get a good look at the fortress" as it lumbered down the taxi way. Little did he know that I was soon going to get a better look. Although my birthday is some time away, my wife Cathie had informed me that I had a ride reserved on the B-17. I was in a hurry to get to the briefing and see what being in a bomber was like. At the briefing, we were given the safety information and told that we must stay buckled up until the plane left the ground and then we could roam all

over the aircraft. As the bomber slowly lifted from the runway at APA, I on signal, quickly unbuckled and headed for the front.

We had been informed during the pre-flight briefing that one of the best views was from the top machine gun turret. That was my first station and I started to snap pictures as the aircraft left APA and headed towards the foothills. I quickly scanned the sky for enemy aircraft and took a bead on an approaching Mooney but the gun was inoperable. Lucky for the Mooney!! I then went down to the bombardier area in the nose and looked over the bomb-sight. Below I could picture the enemy factories and transportation centers that the crew saw so many years ago. I went back to the waist gunner location located beyond the bomb bay and realized that exiting the bomber if it was hit would not be easy. The bomb bay was cramped and a tight fit. The emergency gear extension was also there. A fellow passenger indicated that her dad had to lower the gear once and said that it took all of the energy he had. The foothills of Jefferson County were my backdrop as I took picture after picture.

As we flew along, I could not help but think of the crews that fought over Germany and the conditions that they experienced. The smell of machine gun powder and hot barrels. The cold air at 30,000 feet. The fear, knowing that in some raids as many as 50% of the aircraft were shot down. It made the experience much more real than movies



B-17 Departure from Centennial Airport (APA), photograph courtesy of John Martyny

on TV and, I believe, gave me even more of an understanding of what flying in such a plane, at such a time must have been like. As we exited the aircraft, everyone on board said that they would have paid much more for the ride. Not one person regretted the expense and most said it was the experience of a lifetime. With so few of these aircraft left

and even fewer flying, the opportunity will not be available forever. If you have a kind spouse, I would quickly tell them about this article and ask for a ride. You will not be disappointed and the experience will last a lifetime. Now, Cathie, what about that ride I have always wanted in an F-15?

John



John Unruh

4941 Allison St., Unit 11, Arvada, CO 80002

303-423-3009 • Fax 303-423-2889

sales@allegra-frontrange.com • www.allegra-frontrange.com

Printing **Mailing**
Copying **Services**
Signage
Promotional Products
Graphic
Design



Fly-In to Sturgis, ND

by Bob Kinney

Dakota Arms Factory Tour



When you think of Sturgis, South Dakota you think of cycles. Why not? Once a year the largest gathering of motorcycles in the world takes place in tiny Sturgis. This year, the Colorado Pilot's Association, hosted by Bob & Shawn Kinney and Sturgis' own, Guy Edwards, toured the world renowned Dakota Arms firearms factory and spent a day cycling (*bicycling that is,*) about fifteen miles of the McPhearson Trail.

Following Friday, May 19's arrival everyone traveled to the Dakota Arms factory which is located on the outskirts (*funny to say regarding a town of this size*), of Sturgis. A myriad of questions from interested pilots and a chatty tour guide turned a 1 hour tour turned into a 2-1/2 hour education session. Even those who had no interest in firearms found themselves enchanted with the fine quality of the rifles and shotguns on display in the Dakota Arms gun library. If you're looking for a one-of-a-kind, custom made rifle or shotgun and you have \$2,600 to \$35,000 burning a hole in your pocket give them a call.

Saturday dawned bright and sunny which suited the group as they set out to bike the McPhearson Trail which is South Dakota's equivalent to our Colorado Trail. Built on an old railroad grade, it offered a generally easy ride down hill through conifer and aspen forests to the town of Lead where thirsts were quenched and empty stomachs were filled at a local saloon. Following lunch the riders blazed the last six miles into the town of Deadwood.

Saturday evening the group enjoyed a relaxing evening at Guy's weekend house overlooking Deadwood's main street. Great steak and plenty of liquids (both alcoholic and from the cloudy sky), combined to make the evening memorable. Of course, the fact that Guy enlisted his entire family to help



The bicycle ride provided exercise with great scenery.

with the evening really made things work out right. Great folks! Some of the group even found time to pull a few handles in a casino or two before returning to the hotel for the night.

Once foggy skies cleared on Sunday morning, 15 airplanes carrying 30 folks winged their way back home with spectacular views of



CPA members enjoy a little two-wheeled history at the Sturgis Motorcycle Museum

the Black Hills and further along, the Front Range mountains.

A hearty thank you to CPA member, Guy Edwards, for being such a big part of this fly-in. Not only did he give a big discount to CPA members while staying in his Best Western motel, he discounted meals, shared his Deadwood weekend getaway house, loaned cars, and generally proved to be a really nice guy. Bob

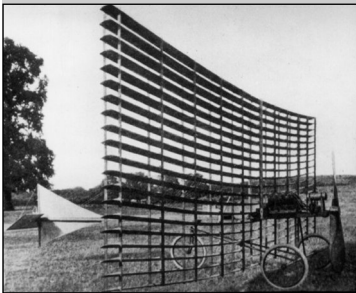


A colorful biker's head scarf brings kisses.

July 2006 Factoid Answer:

The most general answer to this question starts with the fact that air, passing rapidly over a wing, produces lift. The amount of lift generated is a function of several factors. Among the most important are 1) overall area of the wing and 2) speed of the air passing over it. In the early days of aviation, low-powered engines meant relatively low speed through the air. Designers compensated with relatively large wing area. Because of the limitations of structural materials available at the time, a single wing of sufficient area was difficult to build. As a result, most early designs, including that of the Wrights, were biplanes.

Some early experimenters, however, were not comfortable with this standard configuration. For various reasons, they wanted more wings.



Phillips multiplane of 1904. Photo courtesy of Aerospaceweb.

Many wings without rhyme or reason

Some builders seemed, without much evidence, to believe that more wings were always better. Nor was this view confined to theoretically ignorant crackpots. Horatio Phillips, a noted British inventor, worked with a well-designed steam-fed wind tunnel as early as 1884. He was among the first to understand aerodynamic lift, realizing that air passing over a curved surface creates a

low-pressure area. To his credit, Phillips attempted to convert his theoretical advance into a flying reality. His 1893 design featured no fewer than fifty wings, each 22 ft long by 1½ inches wide. Though the wings indeed produced lift, the craft did not fly. Phillips persisted in his research for another eighteen years, adding substantially to aeronautical knowledge. But strangely, he never switched to a more workable wing configuration. Nor did he add ailerons or rudder to any of his designs. Nonetheless, some of his later planes actually did fly. In fact, a 1907 twenty-winger went some 500 ft. This is widely accepted as the first powered, if largely uncontrolled, flight in Britain.

No less a mind than Alexander Graham Bell believed in lots of lifting area. In 1908, as a scientific celebrity and as a member of a major aeronautical research group, he designed a craft with hundreds of tetrahedron cells arranged over a span of 42 ft in 16 layers. Called the Cygnet, this machine was tested on a frozen Canadian lake. It never flew and probably never produced lift as such. Bell's thinking may have been unduly influenced by a

long-standing fascination with kites, which, though he did not know it, really are not at all like airplanes. Fortunately for Bell, his reputation rests on his accomplishments in telephonic communication rather than aeronautics.

Among a slew of even more bizarre designs was the 1909 multiplane of Marquis d'Ecqueville-Montjustin. It had seven wings, all enclosed within vertical steel hoops of 17 ft. diameter. The pilot stood in the center of the hoops. There was no tail nor were there any control surfaces. The multiplane was sheer fantasy. Even at this early date, no serious aerodynamicist could believe such a machine could actually fly. Fortunately, it was burned in a storage shed fire before anyone could get hurt or killed in it. Apparently rich Frenchmen of that age, with fond memories of the bygone status of minor nobility, had nothing better to do with their time.

Many wings to lift big loads

In the early history of aviation, it did not take long for military and business leaders to envision really big aircraft, bombers, patrol craft, and transports among them. In an era of low power, the only reasonable design for such craft entailed lots of wing area. One solution was to retain the traditional biplane configuration, but with larger wings. Several designers, seeing that that larger wings would be structurally difficult, opted for multiple wings of moderate size. Though this rationale for large multiplanes was sound, in practice the results were disappointing.

In World War I, the British fielded the Supermarine Nighthawk, a 60 ft span plane with four wings stacked one above the other. It was a patrol craft designed to intercept and destroy the German dirigibles which had been conducting night bombing raids over London. The idea was to lift heavy guns, armor for the protection of the crew, and enough fuel to stay aloft for up to eighteen hours. Unfortunately, performance was way below expectations. Speed was only 60 mph. It took a full hour to climb to 10,000 ft. Both were inadequate for anti-dirigible missions so there was no development beyond the prototype.

An example closer to home is the Barling XNBL-1 of 1920. The World War I experience convinced the US Army Air Service of the need for a long range, heavy bomber. The Barling was a triplane of 120 ft. wing span. With six 400 hp engines, it was able to take off in less than 1000 ft. Though it had good handling characteristics, its top speed was only 95 mph and it had a range of only 170 miles, both insufficient for its design purpose. There was no production run.



Barling XNBL-1 of 1920. Photo courtesy of Aerofiles

July 2006 continued on page 16

Similar thinking underlay a contemporary of the Barling, the British Tarrant Tabor. This triplane bomber had a span of 131 ft., truly gigantic for the day. Two of its six engines were mounted well above the middle wing. This high thrust-line was a major design flaw, however. On its first and only take off attempt, bringing the upper engines to full power caused the craft to nose over. The crash killed the pilot and convinced the brass to cancel the project.

Though unsuccessful, these three designs were at least reasonable. Such cannot be said for the Italian Caproni Ca-60 of 1921. It was a large flying boat designed to carry 100 passengers, their luggage, and an attentive servant staff all in luxurious comfort. Its load would have been immense. It resembled a huge houseboat. In defiance of any then-known aerodynamic principles, it had no fewer than nine wings, arranged in tiers of three, one tier forward, one amidships, and one aft. Though tandem-winged craft have flown, it is unlikely that the Ca-60 was viable in any sense. On its only attempted flight, the Ca-60 staggered to an altitude of 60 ft, nosed over, crashed, and sank. The Ca-60 is a true puzzle for its designer, Gianni Caproni, produced many successful aircraft both before and after this debacle. Like Phillips and Bell before him, he was an intelligent and inventive



Caproni Ca-60 of 1921. Photo public domain.

person. What strange urge led him into this many-winged dead end? Apparently Caproni learned from this failure, for all of his future efforts were devoted to more conventional designs.

Many wings to reduce drag or increase roll, Some early multiplane designs were more sophisticated than those so far discussed. They employed a larger number of wings to achieve a pair of aerodynamic qualities desirable in fighter aircraft: high aspect ratio and short wingspan. "Aspect ratio" refers to the length of a wing relative to its chord or width. Long, slender wings are said to have a high aspect ratio (HAR). Such wings, everything else being equal, generate less induced drag, that is, for a given wing area, there are fewer turbulent vortices. Relatedly, as angle of incidence changes, narrow chord wings display a smaller alteration in center of pressure. This in turn requires less elevator authority and thus permits a shorter fuselage. Finally, short wingspan aircraft, everything else being equal, have a higher roll rate, something very valuable in a combat situation.

As early as World War I, top designers at least partially understood these principles, and also saw that they operated at cross-purposes. That is, a typical HAR wing could not be of short span. Herbert Smith, a designer for the British Sopwith firm, sought to defeat this contradiction in his 1916 design for a new fighter. He chose a triplane design. The total area of the three wings was about the same as the two wings of the typical biplane fighter. But each triplane wing could be made relatively narrow and relatively short. In this way, the drag and center-of-pressure advantages of a HAR arrangement could be preserved while retaining a good roll-rate.



*Sopwith Triplane of 1916.
Photo courtesy of Aviation History
On-Line Museum.*

The Sopwith Triplane served quite successfully with the British Naval Air Arm. It is said to have inspired Antony Fokker's Dr. 1, a triplane fighter made famous by German ace Baron von Richthofen. Nonetheless, the triplane fighter configuration did not last.

Even before the war's end, advances in biplane design condemned them to second class status. The additional strutwork of a triplane created drag of its own and their inherent complexity created structural design and construction problems.

Back in 1925, W. Frederick Gerhardt, was a scientist at America's first major aeronautical research and development facility. Always seeking greater aerodynamic efficiency and lower drag, he experimented with human powered flight. He well knew the advantage of HAR, but his calculations showed that a single narrow wing for his proposed pedal-powered craft would have to be more than 240 ft. long. Since this was a structural impossibility, he stacked no fewer than seven narrow 35 ft. wings one above the other. Reports vary as to how successful the Gerhardt Cycleplane actually was, but it seems actually to have flown. Apparently, short level flights were possible once the craft was towed aloft by an automobile. Though clearly not the dramatic achievement of Paul MacCready's human powered 1979 Gossamer Albatross, Gerhardt's work with multiple wings clearly advanced our understanding of aerodynamic principles.

In summary, many-winged craft occasionally have been important in advancing basic aeronautical research, and a few achieved a degree of practical success. But most were failures and some were downright absurdities. It is certainly to the advantage of aviation that the early traditional biplane configuration evolved in the direction of monoplanes rather than multiplanes.

Dean

Colorado Pilots Association Membership Changes

Welcome New Members

Gerry Denofsky
P. O. Box 770626
Steamboat Spgs, CO 80477-0626

Bob Hilmo
19032 Harrogate Court
Monument, CO 80132-2863

Margaret Stover
7131 Parks Lane
Fort Lupton, CO 80621-8530

Tom Haefeli
3560 CR 14
Del Norte, CO 81132-9704

Paul Hartig
76 S. Peak Trail
Boulder, CO 80302-9269

Dick Sargent
2150 Lookout Mountain Rd
Golden, CO 80401-1732

John Keller
5823 Via Verona View
Colorado Spgs, CO 80919-5600

Charles E. Coulson
10644 Prouty Road
Concord, OH 44077

Gil Avidar
6500 Lyons Street
Morton Grove, IL 60053-1471

Robb E. James
1011 S Valentia St, Ste. 72
Denver, CO 80247-6815

Roger Beard
1407 Sanford Drive
Fort Collins, CO 80526-4251

Karen Sadenwater
P. O. Box 333
Eldorado Spgs, CO 80025-0333

Henry Suta
2896 W. 115th Circle
Westminster, CO 80234-4666

William Nettleblad
1331 Ruby Way
Longmont, CO 80504-7749

David Miller
1046 Sagebrush Way
Louisville, CO 80027-1641

Rod MacLennan
200 W. 34th Avenue, #868
Anchorage, AK 99503-3969

Darrel Dilley
20501 WCR 37
La Salle, CO 80645-9310

John Snapp
10659 Wolff Way
Westminster, CO 80031-1979

Greg McMichael
818 Logan Street, #801
Denver, CO 80203-3123

Steve Hickman
9703 Tall Grass Circle
Lone Tree, CO 80124-3108

Scott Reisch
370 17th Street, Ste. 5380
Denver, CO 80202-5629

Peter Kos
224 Hiawatha Court
Fort Collins, CO 80525-1841

Shawn Campbell
4969 Fenwood
Highlands Ranch, CO 80130

Don Metzler
1101 W. Enclave Circle
Louisville, CO 80027-2900

Mike Smith
6414 Mesedge Drive
Colorado Spgs, CO 80919-1813

Membership Renewals

Mark Hopkins, Boulder
Joe Mottershaw, Parker
Chuck White, Aurora
Stephen Dyer, Brighton
Earl Tighe, Littleton
Jim Flohr, Parker
Jack Cronin, Denver
Keith Singer, Denver
Dick Merring, Elbert
Scott Laudenslager, Aurora
Don Sinel, Elbert
Susan Osborne, Highlands Ranch
Brian McKay, West Covina, CA
Stephen Brutscher, Fort Collins
Michael Kraft, Castle Rock
Gerry Zimmerman, Brighton
Jer/ Eberhard, Fort Collins
Fred O'Neil, Lakewood
Evan Slack, Denver
Frank Matthews, Colo Springs
Bill Linenberger, Aurora
Joe Stephenson, Sedalia
Steve Niessner, Golden
Doug Tabor, Estes Park
William Waite, Boulder
Wayne Fry, Lakewood
Ethan Martin, Denver
Paul Bonacci, Denver
Robert Johnson, Dillon
Denis Walsh, Denver
Ed Cutler, Denver
Michael Mann, Rye
Lori Eddlemon, Englewood
Keith Serkes, Erie
Richard Compton, Longmont
Bill Kosena, Centennial
John Juul, Broomfield
William Sampler, Centennial
Glenn Hetchler, Berthoud
Bill Standerfer, Fort Collins
Jack Burson, Superior
Darrel Watson, Elbert
Mark Brown, Aurora



CPA DIRECTORY

Area Representatives

Burlington / Eastern Colorado
Larry Mack 719/346-7884 (H)
719/346-5352 (W)
Lmack1@rebeltec.net

Centennial Airport - Bob Doubek
303/771-8148
idacrase@4dv.net

Colorado Springs - Bob Figgie
719/598-5111 (H)
719/243-2280 (W)
Travelaire921@earthlink.net

Craig-Moffat - John Ponikvar
970/824-2148 (H)
970/824-3496 (W)
jponik@amigo.net

Crawford - Rob Duncan
970/921-3400 (H&W)
sales@airbase1.com

Delta - Scott Morse
970/856-7453
badgergulch@att.net

Durango / La Plata County
Paul Staby 970/259-7577
jpstaby@compuserve.com

Erie Municipal - Jerry Schofield
303/663-3963 (H)
303/663-3973 (W)

Fort Collins - Downtown
Ron Zasadzinski
970/227-0489 (H&W)
ronz@flyron.com

Fort Collins - Loveland
Jan McKenzie 970/686-1233 (H)
mckenjn@yahoo.com

Front Range Airport - Bill Totten
303/364-5238
btotten@westernaero.com

Grand Junction - Deanna Strand
970/245-7289 (H)
970/243-4359 (W)
deanna3@bresnan.net

Jefferson County Airport
Darl Cinquanta
303/423-9846 (H&W)
CQ7014@aol.com

Kremmling / Summit County
Ron Lewark 303/668-3089 (H)
303/668-3093 (W)
c185guy@aol.com

Longmont - Pat Spears
303/684-9626 (H)
303/774-1398 (W)
Patricia.Spears@comcast.net

Meeker / Rangely - Mike Brennan
970/878-4346 (H)
970/675-3284 (W)
mbrennan5@netelecom.net

Montrose / Delta - Rick Reisman
970/323-0315 (H)
970/874-5181 (W)
sjfaster@aol.com

Pagosa Springs - Jim Carey
970/731-3694 (H)
tiger10@centurytel.net

Pueblo - Torry Krutzke
719/546-0888 (H)
torryk@mindspring.com

Rifle / Garfield County
Larry Smalley 970/625-3222 (H)
303/918-7220 (M)

Salida / Chaffee County
Bill Reeves 719/539-1185 (H&W)
reeves@amigo.net

San Luis Valley - Mike Entz
719/754-3165 (H)
719/754-2700 (W)
maentz@starband.net

Springfield - John Webb
303/796-7739 (H)
303/946-1874 (Cell)
n2534x@msn.com

Steamboat Springs - Steve Green
970/877-5717 (H)
970/879-5717 (W)
sbpspsg@yahoo.com

Walsenburg - Mike Mann
719/676-2051 (H & W)
airmannav@aol.com

Wray - Lucile Bledsoe
970/332-5143 (H)
970/332-4955 (W)
lmbledsoe@plains.net

CPA Executive Board

CPA President Bart Jones
719/488-0653

CPA Vice President
Sarah Jane Dolliver
303/766-3819

CPA Secretary Vacant

CPA Treasurer Peggy Long
303/733-7456

CPA Flight Lines Publisher
Colorado Pilots Association, Inc.
719/488-0653

CPA Flight Lines
Circulation Manager Terry Barbo
303/367-0670

CPA Committee Chairpersons:

Airspace Walter Bell
303/488-9780

Air Classic Robert Venohr
303/766-0742 (H)

Back Country Airstrips
Bill Meine
303/795-2755 (H)

Education Torry Krutzke
719 / 546-0888 (H)

Fly-ins Eric Jensen
970/482-7160 (H)

Legislative Affairs Gary Tobey
303/699-7371 (H)
303/799-8600 (W)

Membership Records Terry Barbo
303/367-0670

Mountain Flying Brian Jones
303/841-1192 (H&W)

CPA Flight Lines, Editors
Beverly & Carl Boecher
303/697-5161 (H)

Public Affairs Mark Hopkins
303/494-1211

Recognition & Awards
Bruce Hulley
303/344-2843

Safety
Bill Linenberger
303/344-0183 (W)

Web Master
Rob Duncan
970/921-3401

CPA Liaison Chairpersons:

Flight Safety Foundation
Walt Barbo
303/637-0670

Angel Flight
Mark Kolber
303/694-2603

AOPA
Bill Hamilton
970/887-2101

Colo Aeronautical Board
Pat Wiesner
303/397-7600 (W)

Colo Airport Operators
Steve Lee
303/342-4200

Colorado Wing Cap
Colorado 99s
Sue Osborne
303/471-0665

Commemorative Air Force
Rob Duncan
970/921-3400

FAA Airports District Office
Scott Fredericksen
303/342-1263

FAA FSDO

Publication Notice

Articles for *CPA Flight Lines* are sought from members and other organizations. Stories and articles can include flying tips, rebuilding and restoration experiences, special trips, activities, etc. All articles and letters should be sent via e-mail to: Beverly and Carl Boecher Editors, *CPA Flight Lines*, phone: 303/697-5161 (H), email: N34552@wisptel.net. Material for publication will be accepted up to a deadline of the 15th of each month. *CPA Flight Lines* shall reserve the right to accept, refuse, or edit any material submitted. Publication of articles and opinions in *CPA Flight Lines* is not an endorsement by the Association, nor does the Association assume responsibility for the accuracy of the information contained in *CPA Flight Lines*.

Colorado Pilots Association, Inc.

APPLICATION FOR INDIVIDUAL MEMBERSHIP/RENEWAL

Name _____

Spouse _____

Street Address _____

City _____ State _____ Zip _____

Phone (H) _____ (W) _____

E-mail _____

Pilot Rating Held _____ Profession _____

A/C Owned (make) _____ Model _____ N # _____

Principal airport based at or flown from _____

Applying for: Check enclosed, payable to CPA, to cover

☐ Renewal or membership & *Flight Lines* Newsletter:

☐ New Membership ☐ \$20 for 1 year membership

☐ \$38 for 2 year membership

☐ \$55 for 3 year membership

Mail to: **CPA, Inc.** ☐ \$200 for 1 year corporate membership

P.O. Box 200911 (includes 2 free 1/2 page ads)

Denver, CO 80220-0911

I am interested in serving as an Area Representative for the
_____ **area.**

I am interested in serving on the following committees:

- | | | |
|--|--|--|
| ☐ Airspace | ☐ Membership | ☐ Fly-In Planning |
| ☐ Flight Safety | ☐ Flight Lines Newsletter | ☐ Air Classic |
| ☐ Education | ☐ Public Affairs | ☐ Programs |
| ☐ Legislative Affairs | ☐ back country Airstrips | ☐ Other |

CPA MERCHANDISE

Caps (lt or dk beige) w/ CPA logo\$10

Lapel Pins\$2

CPA Decal\$1

CPA Logo Golf Shirts\$25

CPA Logo Denim Shirts, short sleeve\$25

CPA Logo Denim Shirts, long sleeve\$30

Shipping and Handling:

Caps add \$2

Pins or Decals add 39¢

Shirts add \$4.00

For shirt information please call Terry Barbo 303-367-0670.

Mail you order to: **CPA, Inc., P.O. Box 200911, Denver, CO 80220-0911**

Newsletter Printed by

KIMCO
ON DEMAND PRINTERS
4120 Brighton Blvd. Suite A21
Denver CO 80216
Phone: (303) 295-1172