

# The Novato Historian

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Novato Historical Guild, the Novato History Museum,  
and the Hamilton Field History Museum

*Preserving Novato's History*

## Feature Section

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# Those Magnificent Men . . .

by John Trumbull

There are times when being a docent at one of our museums is a real awakening. I had one of those moments in January when preparing to squire a class of third graders around the Hamilton Military History museum. My challenge was to explain the Link Trainer's function to them. They could see it was like the fun rides they experienced at Chucky Cheese, but why would grown men get into one? Let me share with you what I came to appreciate about our aviators who flew from Hamilton Field in its early days.

Let your imaginations range back to a time 1) before transistors and printed circuits, 2) before radar became portable, 3) before satellites (or anything else) had been launched into low earth orbit, 4) before laptop or desktop computers had evolved past the slide rule and abacas stage, and 5) when maps were made from ground based observations. There is no television as we know it, and the telephone signal travels on wires. News is reported by the papers and radio, and the dime novel is popular reading.

You are a young (between 17 and 27 years old) pilot, having fallen in love with flying by watching the wing walkers and barn stormers touring the county fairs and by reading about the exploits of Charles Lindberg, Glenn Martin, Eddie Rickenbacker, Jacquelin Cochran and Amelia Earhart in the newspapers. Perhaps you lived near an airfield and you took flying lessons from a local pilot, as many teens did in the 1920's and 30's. Maybe you knew someone who had flown in WWI, or you had read books about flying, such as Antoine De Saint-Exupery's, *War Pilot*. The smoldering excitement of flight is being fanned by news of the romantic young flyers participating in the Spanish war, of the German aerial exploits at Guernica, and of the controversy between Hap Arnold (commander of the Army Air Corps) and the Naval High Command regarding whether sea power or air power would be decisive in the coming conflict.

You join the Army (because there was no independent Air Force, and the Naval Air Corps was vestigial). You are lucky and pass the physical examination, which means you enjoy good health and good eyesight, and probably haven't given much thought to your own mortality. You are sent to pilot training which in the early days was brief and done mostly in the open cockpit of a cloth covered biplane. While subject to a variety of

mechanical glitches and gremlins, the biplanes of the late 30's were both slow and generally forgiving unless flown in combat conditions. They were capable of flight without power and able to land in almost any unobstructed field which might bend the aircraft, but probably not kill the pilot. Training had passed beyond the worst of WWI, where pilots were sent into action with as little as 20 hours solo flight time, but conditions are more complicated now.

As a young pilot you are sent to Hamilton Air Field at Marin Meadows, California, (so this is after May 1935). You are allocated a Martin B-10 bomber to fly. It is a beautiful twin engine, all-metal monoplane with retractable landing gear — top of the line! This is nice because your base commander, (then) Major Clarence L. Tinker flies one, and this plane is the reason the field was constructed. Also you have a crew to help with the guns, the newly invented Norden bombsight, and, most importantly, with navigation. (You could have been assigned to the Boeing P-26 "Pea shooter" where you would be the sole occupant and operator of the craft.)

Since 1932 the military had been looking for training missions for its airmen. They found one in the delivery of the U.S. mail. Despite the opposition of the private airlines (Pan American and Eastern, for several years, had been operating 500 aircraft over 25,000 miles, carrying 1,500 tons of mail a year), in March 1934 the Army Air Corps became involved with delivering mail. Hamilton Field was the hub of the California / Washington service area, and the B-10 was a primary delivery vehicle.

The normal method of navigation in an aircraft is to take a map, such as you have in your automobile glove box, and, by looking down out the cockpit window to locate a recognizable roadway, intersection, building, stream, railroad, hill, or other physical landmark, you locate your position on your map. This is feasible when flying in an open cockpit at a low altitude on a clear day, but what about in the Bay Area's fog? Furthermore, now the cockpit is enclosed, the altitudes are higher and the flight distances longer. Given the primitive "science" of weather predicting and reporting available, this means you face greater chances of becoming involved in a restricted visibility situation.

The pilot in the mid 30's and early 40's had the following instruments to help him in times of fog, darkness, rain or other

visual impairment. **1)** A compass, which, absent magnetic interference, tells you where magnetic north is located, from which you can deduce which direction the plane is flying, but not where you are at the moment. **2)** A bank-and-turn indicator (which is an inverted carpenter's bubble level) tells you if the wings are level. (An aircraft tends to turn toward a low wing, and without a view of the horizon a pilot can fly in a slow turn for a long time without realizing it.) **3)** A dive-and-climb indicator without which one can gradually fly into the ground under conditions where no geographical horizon is visible. **4)** An Altimeter measures air pressure indicating approximately how far above sea level the gauge is at any time, but it does not tell the pilot how high anything outside the aircraft is. **5)** The clock which tells a time, and if used continuously can indicate how long the pilot has been flying. **6)** The anemometer tells the air-speed past the gauge, but does not measure ground speed nor does it distinguish between the airspeed created by the plane and that created by natural conditions, which distorts the speed with which the plane is covering geography. **7)** Finally, there are the fuel gauge and the oil pressure gauge, each of which gives the pilot an idea of how long the motor will continue to run, but not how efficient or effective it is or will be.

In 1928, Edwin A. Link foresaw the need to train pilots to fly in blackout conditions, and he began work on the instrument that would become known as the Link Trainer. (Actually Lt. Carl Crane at Brooks Field, Texas, was a little ahead of Link both conceptually and at the patent office, so the commercial Link Trainer was built under license from Crane.) By 1934 Link had convinced the Air Corps of the efficacy of this device, and it came into general use. The Trainer at Hamilton Field was installed in Hanger 4 and all pilots of the Seventh Bombardment Group were required to take a 15-hour course in it in addition to their regular navigational training. This helped by familiarizing pilots with the use of their instruments, but it didn't solve a lot of the problems created by the information these instruments were unable to give. As a result there were a number of losses of planes in the Air Corps mail service.



*Instrument panel in cockpit of the Link trainer.*

If you have ever been on Mt. Tamalpais when the fog came in, you may be able to empathize with the pilot who is flying in from Hawaii or Texas or somewhere in the Midwest, and expects to land for the first time at Hamilton Field. He has been told that “you can't miss it”—just go up the big bay to the north of the Golden Gate Bridge, and the strip is right at the end of the

bay.” What bay? What bridge? All I see is white!

How about some help from the ground, you say. This is what the Link Trainer was intended to teach; reading the Adcock radio ranges. In 1935, the Chamber of Commerce was the primary maintainer of the beacons for this system, with the Air Corps filling in the gaps. The idea was to broadcast a radio beam with a range of 100 miles that the pilot could follow by listening to the solid hum of the signal. If he deviated left or right, the solid hum would become an interrupted signal (the dot dash of Morse Code A or N depending on your direction in relation to the sending station). The beacons were placed at 200 mile intervals, and the pilot had to lock on to the signal manually each time he reached the limits of a range. (Notice that this would help you locate generally where you were, but not where the airport was.) There was no ground or airborne radar; landing field lights were the only aid for night landings. Radio contact was not dependable – remember those vacuum tubes (?) – anyway a conversation between parties that couldn't see each other is close to futile.

These conditions persisted virtually throughout the second world war, even though air machines evolved by leaps and bounds – from fabric covered, open cockpit craft that flew at around 250 mph for a distance of 600 miles (the P-29) to fighters that were metal, low winged, closed (but not pressurized) cockpit monoplanes capable of flying about 450 mph for more than 900 miles (the P-51). In the bomber business the need for additional navigational information was astounding. We were sending B-17 and B-24 planes to the Pacific islands from Hamilton – via Hawaii. Since the combat range of these planes was less than the distance they had to fly over water, we removed all extraneous weight – such as guns, cargo and passengers – before they left. As Elmer Watson of Novato relates, the B-24 he crewed on was sent at night as part of a flight of several B-24s under radio silence, but separated by a five minute interval between planes. (Out of sight, out of sound!) In order to extend the range of flight, 5 gallon cans of fuel were loaded into the body of the plane at Hamilton so the navigator could top off the main tank in flight. The navigator also had to calculate the ground speed based on the wind conditions, compensate for drift caused by crosswinds or any storms they may encounter, keep track of the course considering these adjustments, and then find the island before the plane ran out of fuel. All this was done with ruler (or dividers) and perhaps a slide rule to help with the math. If an instrument quit, was misread for any reason, or was miscalibrated, “God help us !”

All this came home to me when I considered the picture of the F-16 fighter instrument panel that we have in the Trainer bay. Today our pilots have heads-up displays of computer generated information based on satellite intelligence that penetrates all sorts of weather conditions, and – most importantly – the pilot is able to tell where his plane is at any given moment in relation to other objects of interest, such as mountains and airports. Furthermore, all this instrumentation is generally independent of air, vibration, dust, electrical interference and all those other gremlins that resided in the vacuum tube. This is, of course good, since the planes are flying 300% faster, 300% higher, 400% further and much more often than in WWII.

It was all this that flooded into my mind as I was thinking of my presentation to the third graders, but they don't have the background or perspective we have to appreciate “those marvelous men in their flying machines.”

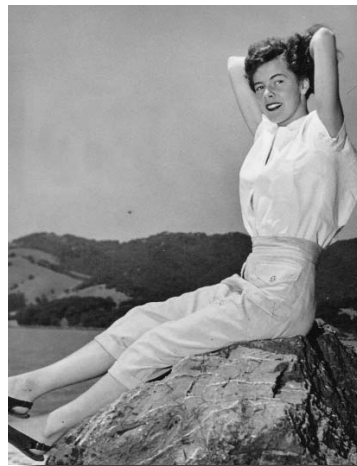
# A Black Point Mystery

by John Trumbull

*Once upon a time (in the late 1940's and 1950's) there lived in the rural outreaches of the little town of Novato a family with three beautiful daughters. Now not far from these princesses lived a humble man who wished to become a professional photographer. The three beautiful daughters took pity on the young man and in good humor posed for him to practice to become an accomplished photographer. Here are some of those early shots (1948).*



*The more he practiced, the better he got, and the princesses continued to pose for him.*



*But alas, one day the inevitable happened. Prince Charming appeared and whisked away one of the beautiful princesses in a big powerful automobile. It was a bittersweet pleasure for the young aspiring photographer to be able to take pictures at the wedding, but he manfully exercised his art. — and . . .*

*... Therefore we have the following pictures.*



*The girls are Toni, Karen and (the bride) Jonna Willette, the prince (groom) is Curt Askim; the two knights are unidentified, but the photographer was Barry Dep.*

The photographer became a professional photographer in Oakland, California. He is now deceased. I think these are daughters of James Willette, grocer, listed in the phone book at 10 Grandview, Black Point, from 1947 to 1957. We would like to know whatever became of the three princesses? Can you help us?