The Official Monthly Newsletter of the Old Dominion Squadron,
Commemorative Air Force

Old Dominion Squadron
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June 2016

Taildragger

ODS at Langley AFB’s
AirPower Over Hampton Roads

CAF Cols (from left) Buck Barrett, Tom McNamara, Parker Livingston, Tom Swartzlander, Jr. and Allen Karst with ODS’ Fairchild J2K-2 Forwarder

CAF Cols (from left) Buck Barrett and Tom McNamara with ODS’ Glenn L. Martin dorsal gun turret

CAF Cols (from left) Buck Barrett, Parker Livingston, Bob Collette, Tom McNamara, Tom Swartzlander, Jr. and Allen Karst at ODS’ PX

Photography:
CAF Col Karen Stout

Fairchild
J2K-2 Forwarder
Miss Cherie II

Stinson
OY-1 Sentinel
Nasty Break V
The Old Dominion Squadron’s initial 2016 Operations schedule is listed at right. Events and dates are subject to change as the year progresses. See future issues of Taildragger for Operations additions and updates.

Squadron members who are aware of or have additional information about other 2016 air shows or similar events within about a 150 mile radius of Franklin Municipal Airport are encouraged to contact ODS’ Operations Officer, CAF Col Michael Kuhnert, as soon as possible. CAF Col Kuhnert will follow up and negotiate ODS aircraft, turret and PX appearances with those events offering the most potential for the Squadron.

The Old Dominion Squadron will also need several volunteers to attend each 2016 event to help support ODS aircraft, turret, PX setup and sales activities as well as Squadron recruiting efforts. Contact CAF Col Kuhnert for more information and to sign up for specific events of interest.

CAF Col Michael Kuhnert
Operations Officer
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<th>LOCATION</th>
<th>CITY/STATE</th>
<th>FAIRCHILD J2K-2 FORWARDER</th>
<th>STINSON OY-1 SENTINEL</th>
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Honoring American Military Aviation through Flight, Exhibition and Remembrance
On the Ground and In the Air at Langley AirPower Over Hampton Roads
The Commemorative Air Force’s Old Dominion Squadron and EAA Chapter 339 of Chesapeake, Virginia cook up pancake breakfasts once again in 2016 on the fourth Saturday of each month (except December). Each pancake breakfast takes place in the Old Dominion Squadron’s hangar at Franklin Municipal Airport (FKN) in Franklin, Virginia.

Breakfast is served from 8:30 to 10:30 AM. The cost per person is a $7.00 donation.

Pancake breakfasts are jointly prepared by the Old Dominion Squadron and EAA Chapter 339. Both organizations will need volunteers at the Squadron’s hangar each month to assist.

2016
May 28
June 25
July 23
August 27
September 24
October 22
November 26
Honoring American Military Aviation through Flight, Exhibition and Remembrance
On Safety

CAF Col Tom Swartzlander, Jr.
Safety Officer

The air show season is upon us, so I’ll start with a friendly reminder to fly safe, adhere to common sense as well as regulations, know your limits, don’t be shy about asking if you have a question and take the time to research your weak areas before you hit the flight line, as either an operating crew member or a flight line team mate.

In air show ramp areas keep your head on a swivel, be proactive, watch out for your own safety and the folks coming by your displays safety as well.

This month is focused on the Fairchild F-24 type the CAF’s Old Dominion Squadron has located in Franklin, Virginia. I found only two NTSB accident reports online in the official data base.

AIRCRAFT: FAIRCHILD F-24, REGISTRATION: N77697
PRIVATE, AGE 46, NOT INSTRUMENT RATED
PLEASURE/PERSONAL TRANSP
DAMAGE-SUBSTANTIAL
PHASE OF OPERATION: LANDING, ROLL
COLLIDED WITH: OBJECT

PROBABLE CAUSE(S)
Pilot in command failed to maintain directional control
REMARKS: SHALLOW RAVINE

Directional Control

Every year the FAA has loss of directional control during takeoff and landing as one of the three leading accident producers. Because of slow airspeeds few of these are fatal but do result in personal injury and substantial damage to the aircraft.

These types of accidents are generally an accumulation of two or more contributing factors occurring simultaneously. Listed are a few measures that may assist in maintaining directional control:

• Confirm tire and struts are properly inflated. Confirm tire PSI in the POH. Be sure to squawk any nose wheel shimmy.

• Inspect tire for cuts, flat spots from improper braking and for excessive wear. If you experience a blowout shut down the throttle and continue normal steering procedures. Don’t stop completely until you have cleared the runway. Once stopped you may not be able to get the plane rolling with safe taxi power.

• Always be aware of wake turbulence. If you feel it is necessary request an additional 30 to 45 seconds from ATC for wake turbulence to pass, especially on a calm day.

• Every takeoff and landing try to stay on the centerline, any distance off cuts down on reaction time if a second factor for loss of control comes into play; i.e. tire blowout.

• Anticipate effects of “P” factor, especially during take off.

• Avoid misuse of aileron drag, also referred to as adverse yaw. Always correct with rudder.

• Maintain crosswind skills, this is usually the first skill to erode without practice.

• Keep mentally focused and avoid distractions, such as conversations with passengers, talking on the radio or setting nav-aids.*

PROBABLE CAUSE
08/29/1966
WARRENVILLE, ILLINOIS
FAIRCHILD F-24 N20628
NONFATAL
NTSB IDENTIFICATION: CHI67F0303

AIRCRAFT: FAIRCHILD F-24, REGISTRATION: N20628
PRIVATE, AGE 22, NOT INSTRUMENT RATED
DAMAGE-SUBSTANTIAL
PHASE OF OPERATION

(Continued on page 9)
Emergency Landings

Mechanical Engine Failure

A rapid and total loss of engine oil in flight is indicated by a loss of oil pressure WITHOUT an increase in oil temperature since there will be no oil in the vicinity of the oil temperature probe.

One cause of engine failure is due to the failure of some engine component. The other three reasons involve loss of spark, air, or fuel. Ignition failure is seldom total because of duplications in the system. Lack of air is most common due to induction or carburetor icing. Proper fuel management most easily avoids the most common cause of engine failure. Fuel starvation is when fuel is available but not getting to the engine. Fuel exhaustion is when you are out of fuel.

Lycoming makes engines that may be equipped with a single drive shaft for both magnetos.

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The duality of the magnetos is useless in this event.

An aircraft is most likely to have a component failure during the takeoff and landing process.

The use of maximum power and power changes seem to precipitate failures. Rapid power changes can cause a pre-existing component weakness to reach the point of failure.

Either can be prevented by:

• Crew will determine fuel quantity, type, and quality.
• Depart ramp on fullest tank or both.
• Confirm both by feel and visually any fuel selector indent setting.
• Find out what a selector does in other positions on the ground.
• Select new tanks only in vicinity of airports.
• Use chart to note places of fuel tank changes.

Other Engine Failures

Excessive in flight idling of the engine will cause the engine to cool to the point that fuel may not vaporize in the carburetor. This drastically leans the mixture and can fail the engine. A sudden throttle movement may make the problem worse. Precautions are to make ground check of idling setting, avoid abrupt throttle movements at all times. Keep the engine warm during glides by frequently opening the throttle for a few seconds.

The essential element of any engine failure is the amount of time you have remaining in the air. You must have a prepared plan to use and a checklist to make sure you follow the plan. The quickest emergency checklist utilizes the cross panel flow. This must be adjusted to each cockpit and aircraft type. The flow of one instrument panel will seldom work on another panel. The flow lets you complete the task flow quickly and even more quickly confirm completion by reference to the checklist.

You will never be prepared for an engine failure. An engine failure will never occur at an appropriate time. It takes a minimum of four (4) seconds to become aware that the engine has failed and to wish that it hadn't happened. Don't do anything.

• Get the checklist and use it. The pilot who does not have an emergency checklist immediately at hand often becomes just a passenger on the way to the ground.

You must know your aircraft speeds and just to be sure have them on your basic emergency checklist in different colors for the aircraft you fly. There are several engine-out glide speeds. The best glide speed is a lift/drag ratio for best distance. This is between Vx and Vy but will vary by weight. Adding 1/3 of headwind velocity to best glide speed give a penetration glide speed for best distance. The minimum sink speed keeps you in the air the longest.

• Select a speed and trim for it. Gain any altitude you can with excess speed.

(Continued on page 10)
• Turn to your choice of field based on wind direction. If at high altitude turn toward lower elevations and make your choice at about 3000' AGL (above ground level).

• Go through your engine restart procedure but first undo the last thing you did to engine operation before it failed. Check fuel, ignition and air to the engine. All three are necessary but the fuel system is most likely to fail. Magneto switch is the only ignition element available to the pilot. Throttle and carburetor heat are the air controls for the engine.

Engine restart checklists begin with the fuel selector, to the mixture and gauges. Then right to left the flow goes from carburetor heat to magnetos, to primer. Practice until you can hit each item with your eyes closed. Then confirm that all items have been completed.

After you have done all the normal things, start being creative. Don't expect what you do to make sense but if it works don't ask why until Sunday. Consider that a primer that has worked loose can cause a rough engine. A partially open primer allows raw fuel to get into the engine intake without atomizing as required for proper combustion.

• Prepare the cockpit and yourself for the inevitable. Tighten, pad, and protect as best you can. Seats belts and doors.

• Use your radio.

• Make your landing crash as slow and as controlled as possible. Fly the airplane. Deceleration impacts increase as the square of the speed. Impact forces at 60 kts are four times those at 30 kts. The cockpit will remain intact to 9-Gs. At 45 kts only 9.4 feet of deceleration will bring you to a stop. Your mission, should you choose to accept it, is to keep you and yours from rattling around inside the cage.

• Prevent fire by shutting off fuel and electricity. When everything stops moving, get out.

The vast majority of engine failures never make Eyewitness News because a successful emergency landing is non-news. Only one out of every seventeen emergency landings results in a fatality. Most pilots will never experience such an emergency in their lifetime.

Dealing with Engine Failure

Dealing with an engine failure depends on a series of factors, pilot competence, type of aircraft, extent of failure, type of failure, altitude, and general weather/surface conditions. Focus must be on keeping the aircraft aloft and under control. The more altitude the more options you have in acquiring assistance. Emergency checklist is the essential safety aid to be consulted as to what to do.

Apply carburetor heat, open alternate air, switch tanks, turn on fuel pump, check primer pump, select magneto, even moderate vibration calls for immediate shutdown.

The standard emergency for engine failure on takeoff is to land ahead into the wind. Make no more than 30 degrees of heading change to locate the best landing place. An emergency landing into a 10 kt wind at a full flap stall speed of 35 kts gives you a survivable ground contact speed of 25 kts. However, there is another option possible if sufficient altitude has been gained before failure. (A good reason to always takeoff and climb at best rate, Vy) To determine this altitude it is necessary to practice at altitude. At 3000’ on a North heading, simulate engine failure and have the student execute a right turn in a 30-degree bank to 240 degrees. Note the altitude loss. Do the same 240-degree turn to the left. Note the altitude loss. Now do both turns with 45 to 60 degree banks. Note altitude lost. Add 50% to the altitudes as a fudge factor for actual use.

From these turns you should decide that the steep turn loses the least altitude. Having determined this we now can add some factors for returning to a runway. If there is (Continued on page 11)
any crosswind always make the turn into the wind since it will bring you back to the runway. If there are parallel runways turn to the parallel since only 180 degrees of turn will be needed. Crossing runways may even need less turn. If the tailwind is 10-kts it will double the required runway for landing.

**Best Glide**

Best glide is when parasitic drag and induced drag are the least. Induced drag decreases with airspeed, and is highest at low speeds as in slow flight. The best glide always occurs at the Angle of Attack that represents the best lift over drag ratio. This angle of attack is a constant, no matter how the aircraft is loaded.

By moving the CG aft, range is increased, but glide is decreased. This means less downward lift required to counteract the CG and less load factor on the wings. The result is a lower angle of attack needed to maintain straight and level flight. The lower angle of attack allows airspeed to increase. With a faster airspeed we get an exponential rise in parasitic drag. This parasitic drag kills your glide.

At any AOA there’s a parasitic drag, and an induced drag contribution to the total drag coefficient. Since the AOA is fixed at best glide, so, also, is the lift coefficient. There is only one factor that we can vary to adjust the lift to match any change in effective weight, the speed. Moving the CG aft, you reduce the second contribution, but leave the first unchanged. Whatever AOA, speed or lift coefficient you fly at, the overall drag coefficient is lower with an aft CG. If you fly the speed that gave best glide for the forward CG, you’ll still get a better glide ratio with the aft CG. By flying a little slower you can get an even better glide ratio.

If the effective weight of the aircraft is decreased, while the angle of attack remains the same then the speed for that specific angle of attack must decrease. If the weight increases then the speed must increase to hold that most efficient L/D angle of attack. Adding ballast to a glider increases the penetration capability. The glide angle remains the same, but the speed to obtain that best glide angle increases with the weight. Your "glide angle" remains unchanged since as the weight increases your sink rate increases. Distance covered increases by exactly the same ratio.

Conventional aircraft carry a download on the tail for stability. Moving the CG moves aft reduces the download. This reduction in download acts like a decrease in weight. Since the download on the tail augments your pitch stability reduces your pitch stability margin. At some point the download reduction makes the aircraft difficult to fly. Approaching a stall quickly may make it impossible to get the nose to come back down.

**Risk Factors**

- An airport near mountains
- Deficiency of RADAR coverage
- Non-precision approach
- Limited terrain lighting on approach path

**Avoidance**

- Maintain terrain clearance altitudes
- Descend only on published routes
- Identify navais before using
- Cross-check your position
- Night is the most dangerous time**

There may be more accidents on the books, for the civil aircraft but of the 2,330 plus of all versions built, it is amazing that over 300 are still on the FAA aircraft registration lists to date.

Sources:
* Fowler, Ron. Plane & Pilot, March 2003
**http://www.pilotfriend.com/training/flight_training/fxd_wing/engine_failure.htm
Remembering CAF Col Bob Fryer, Jr.

Member (standing fourth from right) of Old Dominion Squadron’s Stinson OY-1 Sentinel restoration team (2012)

Marshalling a North American T-28 Trojan at FKN (2012)

Staff member (second from left) CAF Old Dominion Squadron (2010)

Briefing (far right) ODS Wings and Wheels pilots at PVG (2005)

With a Piper L-4 Grasshopper at PVG (2005)

An easy way to make a planned gift is by including a bequest in your will. Through a bequest, you can make your wishes known today without relinquishing needed assets during your lifetime. Both large and small bequests can play a major role in the Squadron’s development.

A bequest to the Squadron can be included in the body of your Last Will and Testament or in an addition to it through a codicil. To name the Squadron as the beneficiary, please use its legal name, "CAF Old Dominion Squadron."

As with lifetime gifts, a specific purpose may be designated for the use of your bequest. If this is your desire, you or your lawyer should contact ODS to make sure the language used in your will correctly states the restrictions. Testamentary gifts to the Squadron are typically deductible for estate tax purposes and may be made in several ways.

Contact CAF Col Karen Stout, PX Officer, for more volunteer information as well as to sign up for specific shows of interest throughout the coming year.

Also see future issues of Taildragger for 2016 Operations event additions and updates.
The Old Dominion Squadron’s *Adopt A Hangar* program continues in 2016. To adopt the Squadron’s Franklin Municipal Airport hangar in Franklin, Virginia, an ODS member or any other interested individual agrees to contribute as much as they can toward one or more months’ rent. Current monthly rent is $650. Anyone contributing to one month’s rent, at one time or over a period of several months, is eligible for a ride in one of the Squadron’s aircraft.

For more Old Dominion Squadron *Adopt A Hangar* information and contribution opportunities, contact CAF Col Todd Fisher, ODS Finance Officer or CAF Col Bob Collette, ODS Unit Leader/Adjutant. Make your checks payable to the CAF Old Dominion Squadron and mail them to either Squadron officer.
Honoring American Military Aviation through Flight, Exhibition and Remembrance

USAF Thunderbirds Over Hampton Roads

Photography: CAF Col Karen Stout
Administration: In the absence of CAF Col Collette, CAF Col Stout reviewed the following:

To date, nineteen colonels have donated $40 each to Aircraft Excess Liability insurance coverage recently mandated by CAF Headquarters. The total so far of about $760 falls short of the approximate $1,775 needed.

T-shirts recently ordered by ODS and sold through the PX are fading. Following CAF Col Bob Collette’s letter to the vendor, the vendor offered to reprint or refund. CAF Col Stout suggested taking the refund and looking for another vendor.

Along with CAF Col John Friesz, Col Stout noted that attendance at April’s ODS/EAA 339 Pancake Breakfast was low primarily due to poor weather conditions.

CAF Col Friesz to look into a “Gone West” plaque for CAF Col Bob Fryer Jr, due to his recent and unexpected passing.

Col Stout reiterated the recent offer made by CAF Col Raf Collado to assist the Squadron through the sale of rides in his privately owned aircraft. CAF Col Collado had also agreed to furnish some of his aircraft at any local venue the Squadron may host, such as a fly-in or a hangar dance.

CAF Col Collete to make the necessary contact about ODS participation at the September 10-11 NAS Oceana air show.

Financial: CAF Col Todd Fisher noted that receivables totaled $4,061.53, credit card account $1,032.33 and business checking account $3,338.47. Accounts payable stood at $6,296.87. The Minimum Cost Recovery Program (MCRP) funds available for the Squadron’s OY-1/L-5 reflect a balance of $5,139.13. MCRP for the J2K-2/UC-61 was $14,296.93.

Operations: CAF Col Michael Kuhnert reported on the air show and event schedule for the balance of 2016. Remaining air shows and events currently under negotiation include: May 20-22 Warbirds Over the Beach at the Military Aviation Museum in Virginia Beach, Virginia (PX, turret, J2K-2); May 20-22 Shaw Air Expo at Shaw AFB, South Carolina (OY-1); June 3-5 World War II Weekend at Reading, Pennsylvania (J2K-2 or OY-1); July 2 Chrisfield, Maryland (J2K-2); July 4 Fourth of July Fly-Over at Yorktown and Gloucester Point, Virginia (J2K-2 and/or OY-1); July 9 Class of ’43 Gathering of World War II Aircraft at Williamsburg, Virginia (PX);
August 20-21 New Garden Air Show at Toughkenamon, Pennsylvania (J2K-2); September 10-11 NAS Oceana Air Show at Virginia Beach, Virginia (PX, turret, OY-1); September 10 Airport Fly-In at Tappahannock, Virginia (J2K-2); September 15-17 Let Freedom Ring Air Show at Lonesome Pine Airport in Wise, Virginia (J2K-2); September 24-25 Wings and Wheels at Hummel, Virginia (PX, turret, J2K-2, OY-1); September 28-October 1 NIFA Region X SAFECON at ODS hangar at Franklin, Virginia; October 8 AirFest at Culpeper, Virginia (OY-1); October 8 Virginia Festival of Flight at Suffolk, Virginia (PX, turret, J2K-2); October 29 Open House at USCG Air Station, Elizabeth City, North Carolina (PX, J2K-2, OY-1). CAF Col Kuhnert also advised that, weather permitting, he will fly the J2K-2 to the Military Aviation Museum in Virginia Beach Thursday, May 19 for Warbirds Over the Beach next weekend.

Maintenance: CAF Col Allen Karst indicated that the J2K-2 continues in an up status. The OY-1’s rudder has been repaired and installed along with the control cables. Only the tail cone remains to be installed.

Safety: CAF Col Tom Swartzlander, Jr. was not present.

COMMITTEE/PROJECTS

Taildragger: CAF Col Jim Euverard had nothing to report.

Public Affairs/Communications: CAF Col Euverard has e-mailed about a half dozen photographs of each ODS aircraft to CAF Headquarters for potential insertion in the Commemorative Air Force’s 2017 calendar. Am Old Dominion Squadron photograph of the J2K-2 is currently at the top of CAF’s Facebook page.

PX: CAF Col Karen Stout thanked all who provided at show support at Mecklenburg-Brunswick Regional Airport’s Wings, Wheels and Craft show. The PX took in over $200 in sales.

Recruiting: CAF Col Bob Collette was not present.

Fund Raising: CAF Col Bob Collette was not present.

Social Report: CAF Col Larry Stout had nothing new to report.

Sunshine Committee: CAF Col Friesz reiterated the recent passing of CAF Col Bob Fryer, Jr.

NEW BUSINESS

The next Old Dominion Squadron meeting takes place at 10:00 AM on Saturday, June 11, 2016 in the conference room of Franklin Municipal Airport’s operations building.
Flying boats have become rare on the aviation scene today, but there is one flying boat remembered by every flyer. The PBY Catalina is the most widely-used flying boat ever built. Originally, the American idea of a flying boat grew out of the Navy's Curtiss boats of World War I; twin-engine biplanes with open cockpits and lots of struts. It was the PBY that replaced this style with its own streamlined monoplane look. The story may be begun in 1927, when the United States Navy decided to get a new patrol plane that would be built as a 100 foot span monoplane with an all-metal structure and a range long enough to fly directly to Panama, Alaska and Hawaii.

The Consolidated Aircraft Corporation of Buffalo, New York, forerunner of today's Convair Division of General Dynamics at San Diego got the contract on 28 February 1928. Company General Manager Rueben H. Fleet put Isaac Macklin Laddon in charge of the design, called the Consolidated Model 16 by the company and XPY-1 by the Navy. The big boat was made in Buffalo, but since the nearby river was frozen, had to be taken to the Anacostia Navy Yard near Washington, D.C. for the final assembly and flight test. First flown 22 January 1929 the XPY-1 had two 450 hp. R-1340-38 Pratt & Whitney Wasps between an all-metal hull with four open cockpits and the fabric-covered, metal-structure wing. Top speed was only 118 mph, but 1021 gallons of fuel offered a theoretical range of up to 2,600 miles. To the company's disappointment, however, Consolidated got no production contract. Instead, Glenn L. Martin, who had underbid Consolidated for the contract, received an order 29 June 1929 for nine P3M-1 boats built to the same specifications, along with an XP2M-1 prototype designed with three larger engines.

Consolidated did succeed in selling 14 of a 20-passenger version called the Commodore. They went into service on a New York to Buenos Aires run, and were taken over in 1930 by Pan American Airways. Meanwhile, Laddon tried to prepare a more advanced version of his patrol plane type. A third engine was installed on the XPY-1 in August 1929, mounted high above the wings, but this was an awkward expedient to add more power.

THE FIRST PBY'S

Success in building the P2Y patrol series led Consolidated to the design that became the principal Allied patrol plane of World War II. Isaac M Laddon designed the Consolidated Model 28 as an all-metal monoplane using two new Pratt & Whitney Twin Wasp engines, the 14-cylinder, twin-row, R-1830-58 giving 800 hp at sea level. Careful attention was given

(Continued on page 19)
to streamlining, even to having the out-board floats fold upwards to become wing tips. The wings contained integral fuel tanks, and were metal, except for fabric covering aft of the rear spar. A prototype, designated XP3Y-1, was ordered on 28 October 1933 for $268,476.00, built in Buffalo, shipped by rail to Anacostia, and was first flown by company test pilot William B. Wheatley on 21 March 1935. The aircraft handled well, and was flown to Norfolk, Virginia on 28 March for further tests, although the original rudder had to be enlarged by extending the trailing edge. Competing with the XP3Y-1 was a Douglas flying boat, the XP3D-1 under test in California since 6 February. In Fleet Admiral E. J. King's memoirs, the former Bureau of Aeronautics chief remarked that these aircraft, "proved so similar in performance that the choice finally came down to a matter of price," and Douglas estimated $110,000 per plane. Consolidated got the contract on 29 June 1935, for 60 P3Y-1's at $90,000 each, plus 20 percent s

pare parts, drawings, tests, etc., for a total of $6,506,000. The designation was changed to PBY-1 in August 1936. In October, the public first learned of the plane's potential when LCDR Knefler McCinnis flew the XP3Y-1 from Norfolk to San Francisco, arriving 15 October 1935. This flight established a new seaplane world's record; an airline distance of 3,281 statute miles, and a broken line distance of 3,433 miles. The aircraft would have gone as far as Seattle, but had been unable to take on a full fuel load at Coco Solo; when fully loaded the rudder dipped into the water during takeoff. This fault was corrected on production ships by extending the hull below the rudder.

The XP3Y-1 came down to San Diego by 20 October 1935, when Consolidated's new factory was dedicated. Major Reuben Fleet had chosen the new site at Lindbergh field to utilize the climatic advantages. While the factory tooled up for production, the prototype was modified and flew again on 21 May 1936 with a new designation, XPBY-1. It's configuration now included the rotating nose turret, modified tail, and new Pratt & Whitney R-1830-64 Wasps giving 850 hp at 8,000 feet and 900 hp for takeoff.

Top speed, originally 169 mph at sea level, was now increased to 184 mph at 8,000 feet. The improvement was desirable, because Douglas had also modified its prototype into the XP3D-2, with the same R-1830-64 engines and retractable floats. But the XPBY-1 was superior, and on 25 July 1936, the Navy placed a new contract for 50 PBY-2 aircraft at $4,898,000. In September 1936, the first production PBY-1 was accepted, and on 5 October, VP-11 became the first patrol squadron to receive one. The PBY-1 contract was completed in June 1937, and the first PBY-2 had been accepted in May. The remainder were accepted from September 1937 to February 1938.
Only minor changes distinguished the PBY-2. For ice shields, reinforcement plates were added to the hull parallel with the props, and a cut out in the rudder for the horizontal stabilizer instead of a cut out in the horizontal surface for a solid rudder. In service, the PBY’s were immediate successes, making several flights in full squadron force. For example, VP-3 flew a dozen PBY-1’s non-stop from San Diego to Coco Solo, 3,292 miles in 28 hours on 21 June 1937.

The first PBY released for non-Navy use was the "Guba" for explorer Dr. Richard Archbold. registered NC 777, the "Guba" was begun on 18 January 1937, and completed in June like a PBY-1 except for omission of military equipment. Archbold used it to make the first transcontinental flight by a flying boat. When the Russian crew of Levanensky disappeared on a flight across the North Pole, the first "Guba" was sold to the USSR in August 1937, and flown by Sir Hubert Wilkins from Aklavik, Canada over the Arctic seas, searching in vain for the lost crew. During this period, the "Guba" was marked URSS L-2, and returned to New York, where it was disassembled and put aboard ship for Russia.

A second "Guba" was built for the explorer and made a shake-down flight to Miami on 3 December 1937. It retained the NC 777 registration, but can be distinguished from its predecessor by reinforcements on the hull outside the cockpit; shields to protect from propeller-flung ice. This "Guba" left for New Guinea on 2 June 1938, spent eleven months exploring the area, and made the first flight around the world at its greatest diameter. It was sold to Britain in October 1940 and, registered C-ACBJ, provided BOAC transport service to West Africa. Both "Gubas" cost $378,286.00 with spares. The Soviet Union purchased three Model 28-2 cargo-mail boats, along with a license to build them in Russia. One boat was delivered complete, and the other two in sub-assemblies or parts for completion there. The first was begun on 29 March 1937, completed in December 1937, and the price included $623,015 for the aircraft, spares, and license, and $1,141,403 for tools. A party of 18 company engineers were sent in 1938 to help set up the factory in Taganrog, on the Sea of Azov. The plant turned out Soviet PBY's (GST) before being overrun by the Germans in October 1941.

The distinctive feature of the PBY's for Russia was their power plant Wright R-1820-G3 Cyclones rated at 840 hp at 8,700 feet. These were the only PBY's not using twin-row Pratt & Whitney engines. Single-row Cyclones were probably the Soviet choice because this engine was already in Russian production as the M-62. While the bow turret on the first PBY for Russia was replaced by a cargo hatch, the Soviet-built versions had a front gun turret of their own design, and enclosed cold-weather cowls. Later the 950 hp M-87 was used, and claimed to raise top speed

(Continued on page 21)
June 2016

Taildagger

PBY-5 was accepted in September 1940 with 1,200 hp (takeoff) R-1830-82 engines, the first to use 100 octane fuel. Armament included two .50 caliber guns in the waist blisters with 840 rounds and a .30 caliber gun in the bow and in the tunnel with 1,500 rounds. Weight on #2289 was 15,384 lb empty, and 28,957 lb with 1,570 gallons of fuel. The second PBY-5 (#2290) was delivered to the Coast Guard in October 1940, registered V189, and stationed in San Francisco. November deliveries were three PBY-5 and the first three Model 28-5ME boats for Britain, registered as AM 264, W 8405 and AM 265. The British called the PBY "Catalina," a name adopted by the U.S. Navy in October 1941.

The war’s end closed the New Orleans plant and Catalina production. At that point total production included 2160 examples from San Diego, 235 from New Orleans, 731 from Canada and 155 from Philadelphia a total of 3281. It is unclear how many were produced by the Soviets perhaps a 150 or so. Many Catalinas were purchased by civilian companies after the war and flown in the commercial cargo business and as private passenger planes. Unique among many civil conversions of the PBY, was the Bird Innovator: the only 4-engined PBY. Fighting fires became the PBY one of its specialties. On of the Canadian companies called Field Aviation (Toronto) started modifying a fleet of Canso/PBYs as water-scooper. Today the water-bombing career of a PBY is over and only a handful are flying as Warbirds and private airplanes.

### Old Dominion Squadron Membership Application

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I have enclosed my first year dues. I also understand that I must be a CAF Colonel in good standing or have sent my Colonel application to Commemorative Air Force HQ prior to joining the Old Dominion Squadron.

$50.00 (if joining in October, November or December), $35.00 (if joining in January, February or March), $25.00 (if joining in April, May or June), $15.00 (if joining in July, August or September).

Make all checks payable to:
Old Dominion Squadron, CAF

Mail application and payment to:
CAF Col Bob Collette
Squadron Leader/Adjutant/Recruiting
4707Jolliff Woods Drive
Chesapeake, Virginia 23321-1335

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Honoring American Military Aviation through Flight, Exhibition and Remembrance