

Lakes at Tanglefoot - Jun 23-25

Eclipse Splash - Aug 20-22

Priest Lake Splash - Sep 8-10



WASHINGTON SEAPLANE PILOTS ASSOCIATION

Promoting
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Waters



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WSPA News - Summer 2017

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PICTURE OF THE MONTH



You know it's seaplane season when all six float truck parking slots are full

EVENT CALENDAR

See our calendar at → <https://wspa.wildapricot.org/eventcalendar>

- Jun 23-25 Lakes at Tanglefoot
 - Aug 20-22 Oregon Eclipse Splash
 - Sep 8-10 Priest Lake Splash In
 - Sep 23 Possible Splash at W37, American Lake
-
- Board Meetings Noon, Third Wednesday Monthly, at ACE Aviation, Renton, WA
-

FAAST SEMINAR RECAP

Over thirty seaplane pilots and future seaplane pilots attended the WSPA sponsored safety seminar in Renton on April 30th. The seminar was held at Rainier Flight Service at Renton Airport. Positive feedback was received on the Destinations portion of the talk and a future seminar dedicated solely to PNW seaplane destinations is being planned. Look for that here.

POULSBO SPLASH RECAP

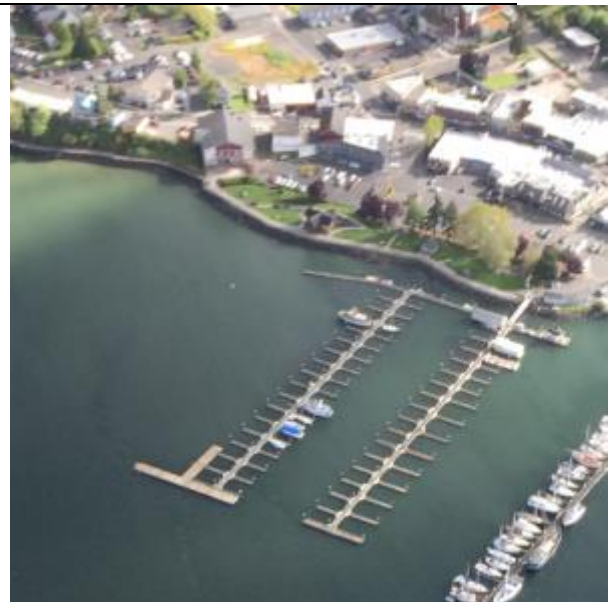
The May 12-15, 2017, Mother's Day Weekend Poulsbo splash was a big success and we plan to do it again. Poulsbo marina manager said, "It was easy to configure the docks for you all. We'll be happy to do it again any time between Labor Day and Memorial Day. People enjoyed the event. No complaints." Twelve planes showed up Saturday and fellow WSPA pilots pitched in to manage the docking and tie downs. Two planes stayed over night Friday. WSPA board members went over Thursday and Friday to consult on the dock configuration which resulted in a well placed and obstruction free situation with good bumpers (tires).

Here are a couple of videos from the event:

<https://youtu.be/6zMtJuj7orw>
<https://youtu.be/pcEMBFtmnZ4>

Apparently there is at least one complainer in Poulsbo. Fly Nice. Fly Quiet

<http://www.kitsapdailynews.com/letters/seaplanes-in-poulsbo-would-be-too-disruptive/>



CENTRAL OREGON SPLASH-OUT – TOTAL SOLAR ECLIPSE - AUGUST 20-22, 2017

Final Notice and Details

Central Oregon Splash-Out – The “Great American Eclipse” 20-22 August 2017

Our plans for this very unique total solar eclipse splash-out are complete. You do not want to miss this event as the next opportunity for viewing a total eclipse in North America is April 2024 with totality only on the east coast!

Our camping location and base of operations will be at Owyhee Reservoir in east-central Oregon. We will be beaching in the bay immediately west of Owyhee Reservoir State Airport (28U – 2680’ASL). The Goggle Earth photo below is dated 15 July 2016. I have been advised by the Owyhee Irrigation District that reservoir levels will be higher than indicated below in mid-August this year due to abundant snow pack (the reservoir is at full pool now). So we will be in good shape for beaching.

This is **primitive camping** with no facilities whatsoever and no cell service. I will be digging a privy pit and have a privacy cover (an outhouse of sorts). All other camping gear is to be provided by the participants (tents, potable water, food, beverages, etc.). WSPA VP, Greg Corrado, will be arriving Owyhee on wheels and has kindly offered to make a jerry can fuel run for those requiring 100LL (likely Ontario, OR or Caldwell, ID). Another option for 100LL on the water in northern Oregon is Wiley’s Seaplane Port on Lake Oswego (20G3). Wiley’s is private and has a limited amount of 100LL. Please coordinate at least a week in advance with Aron Faegre, 503-880-1469. Aron has offered to support eclipse splash-out pilots, if able.



Because Owyhee is slightly south of the swath of totality I have located a better body of water for eclipse viewing, that being Unity Reservoir, OR. Unity is 75nm NNW of Owyhee and 25nm SW of Baker City, OR. Unity Reservoir, 3820’, is open to power boats and has a 10,000+ foot N/S arm and a 7,000+ foot E/W arm. Unity lies right smack in the middle of the totality swath and will have a totality duration of just over 2 minutes (starting at 1023PDT on the 21st). From Unity the eclipse can be viewed from the water, shoreline, a 4956’ASL hill immediately east of the reservoir or from the air.

The day-by-day itinerary is as follows;

- Sunday – 20 August:** Suggested AM flight to Owyhee Reservoir and establish camp. Fuel run as required.
- Monday – 21 August:** Early AM flight to Unity Reservoir and position for eclipse viewing.

Partial eclipse starts at 0909PDT (from 1 o'clock on the sun's disk).
Total eclipse starts at 1023PDT and lasts two amazing minutes.
Early PM return to Owyhee Reservoir camp for "post-eclipse-splash-out celebration party".
Depart Owyhee for points north

Tuesday – 22 August:
(when able).

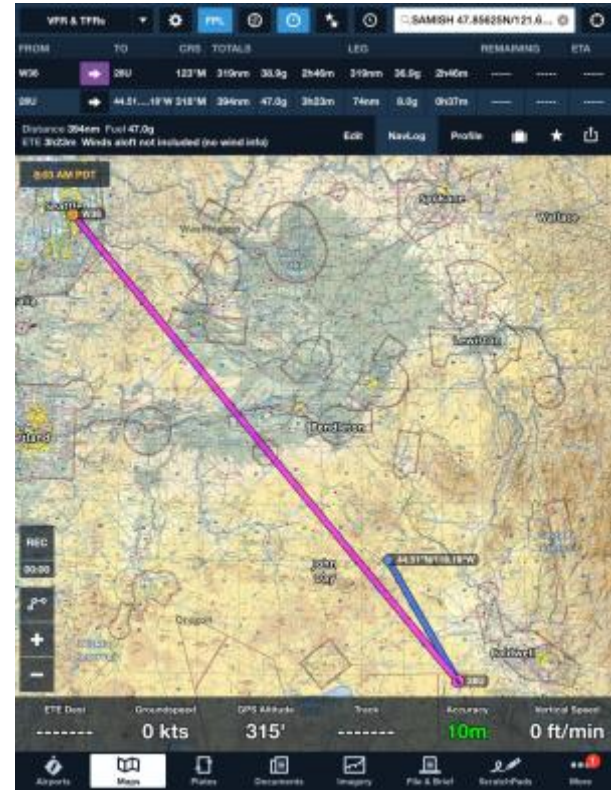
Safety Note: All participants will need eclipse viewing eye protection. Inexpensive and available on-line.

My flight plan (C182) from Renton, W36 to Owyhee and back up NNW to Unity is shown below.

I have had the pleasure of viewing a couple of total solar eclipse. Very impressive from the ground.....perhaps even more impressive while in the air?

Please RSVP to;

Don Goodman
360-303-7076
donaldjg56@gmail.com



PRIEST LAKE TANGLEFOOT WSPA SPLASH IN – SEPT 9-10, 2017

Third Annual Priest Lake Splash-in September 8th 9th & 10th, 2017

Please join us for the Washington Seaplane Pilots Association's third annual splash in at Priest Lake, Idaho. Situated on lovely Cavanaugh Bay, Tanglefoot Seaplane Base (D28) is one of the most unique spots for seaplanes in the northwest if not the world. There is ample space for amphibians as well as straight floats and even for you wheel guys next door at the Cavanaugh Bay airstrip (66S). As of this writing, we are working on the final agenda, which will be announced in subsequent newsletters.

We will have the same basic format as the last two years with a fly-out on Saturday and a reception, dinner and speaker that night. Meals will be provided Friday night thru the weekend, wrapping up with a continental breakfast on Sunday morning.



Accommodations will include camping on-site or at the airport next door. We hope to offer some hotel rooms for rent in Coolin (just down the road) in the coming weeks. We have a special treat for Friday night's dinner this year. WSPA member, Everett Mellish has volunteered to bring his wood fired pizza oven. Based on the pictures, this is surely to be a mouthwatering experience. We are also working on a catered dinner for Saturday night. In past years, we have relied upon contributions and a charge per plane, which has resulted in a less than breakeven weekend for WSPA. This year we plan to charge \$50 per attendee (including your passengers), which will include all meals for the weekend. An announcement of the event will be sent to your email and you will be able to register and pay for the weekend thru the WSPA website (www.Washingtonseaplanepilots.org). We look forward to seeing all of you again this year. Have a safe summer. Jack Jacobson



NEWS

DEPT. OF ECOLOGY APPROVES KIRKLAND SHORELINE PERMIT FOR SEAPLANE FLIGHTS

CATHERINE KRUMMEY, Kirkland Reporter
Mon Jun 12th, 2017 3:12pm NEWS

<https://www.kirklandreporter.com/news/dept-of-ecology-approves-kirkland-shoreline-permit-for-seaplane-flights/>

The Washington State Department of Ecology has approved the shoreline conditional use permit for seaplane excursion flights at Carillon Point.

James Young of Seaplane Scenics and Sue Gemmill of Carillon Properties are the permit applicants proposing to operate a commercial seaplane tourism business out of the Carillon Point Marina. Young's company, which is based in Renton and already offers Lake Washington tours, is looking to expand to Kirkland. The company had been operating for more than a year without obtaining a permit before Seaplane Scenics agreed to halt flights in August 2016 while the permit process played out.



Young and Gemmill have been met with concerns from residents near Carillon Point, including Karen Story, who filed a State Environmental Policy Act (SEPA) appeal in opposition to the permit on behalf of the Citizens for a Livable Waterfront group. The Kirkland hearing examiner denied the appeal in February.

The permit was locally approved — with conditions — by Kirkland hearing examiner Ryan Vancil in April. The conditions include the following:

“The applicant shall provide regular maintenance of aircraft, and operate aircraft, to prevent engine backfire and noise exceeding the maximum levels allowed by code.”

· “Only one take-off and one landing per hour shall occur, including the return flight of the aircraft at the end of the day. The float plane operation shall be limited to the following hours of operation: (a) 9 a.m. to 8 p.m. Monday through Friday; and (b) 9 a.m. to 6 p.m. Saturday, Sunday.”

· “The applicant shall only utilize Cessna 172 and 185 aircraft, or aircraft that meets the same standards or better for noise emissions.”

An email from Dept. of Ecology news media relations representative Larry Altose states that the department made no changes to the conditions the city set. He said the permit meets the conditional use permit criteria in state regulations (WAC 173-27-160) and Shoreline Management Act (SMA) requirements, including:

- The proposed use is water-dependent and thus is encouraged under the SMA as a “preferred use.”
- The “float plane landing and moorage facility” (commercial) use is anticipated (allowed) by the city’s Shoreline Master Program (SMP) and comprehensive plan.
- The use is located within a mixed-use facility (Carillon Point Marina) with existing commercial and recreational uses established at the site.
- The SMP limits this type of operation to established marinas, which are limited throughout the city.

The Dept. of Ecology determination was issued on June 6, and anyone can appeal it with the state Shoreline Hearings Board within 21 days of the issuance. More information about the appeal process can be found at www.eluho.wa.gov/Board/SHB.

As such, Young and Gemmill must wait until after the 21-day period to begin activities authorized by the permit, according to a letter addressed to Gemmill from Joe Burcar with the Dept. of Ecology.

More information about the conditional use permit, which is also known as file number SHR16-00803, can be found on the city’s website, kirklandwa.gov, on the planning department’s public notices page.

Note: WSPA Members and Board Members wrote letters and testified under oath at the hearings! Thank You WSPA!

THEA FOSS FLOATPLANE DOCK OUT OF SERVICE JUN 15-18

The Thea Foss waterway here in Tacoma is hosting the Festival of Sail June 15-18. Accordingly, the seaplane float here has been taken out of service for a few days. We will post reopening on Facebook.

PNW SEAPLANE WEBCAM PROJECT

Most of us use webcams nowadays as an integral part of a preflight weather briefing. The WSPA website lists the most popular and widely used webcams in the Pacific Northwest. We are in process of developing an interactive click-and-view map. You can find it here:

https://www.google.com/maps/d/viewer?mid=17ku6pcQ5PkbVVu_CKd5_Ghah3F4

If you know of other useful webcams, please let us know and if you know a better way to present the technology interactively, speak up, we can use your help.

LAKE ISABEL CLEANUP PROJECT

by: Don Goodman, Jack Jacobson

WSPA is working with the Forest Service to install a backcountry toilet and improve the trail above the beach at Lake Isabel. Humans are currently using the area above the beach as a toilet. We'll spare you the graphics pictures in the newsletter. Don, Jack and Austin recently visited the site and identified preferred locations for the outdoor toilet. Please use it when we get it installed. Or do what you do with your dog's feces, bag it and take it home.

WSPA Board members Don Goodman and Austin Watson discussing today's strategy on locating a suitable site for the "pit toilet initiative" at Lake Isabel. They were accompanied by Austin's student Don and Don Goodman's friend, Dave. A couple of suggested sites were selected as well as a preferred route. Don will be corresponding with the Forest Service this week and hopefully gain approval of our suggestions.

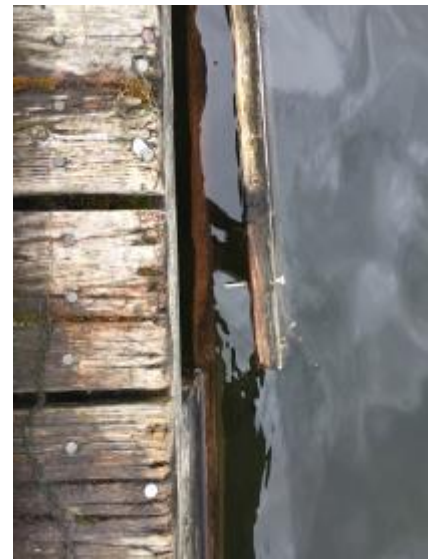


LAKE ISABEL FISH STOCKING PROJECT

WSPA is working with Washington Trailblazers <https://www.watrailblazers.org/> and the State of Washington to restock Lake Isabel with Trout. Several pilots are scheduled to deliver fish later in June. If you are interested in participating, contact austin.watson@ieee.org

SPENCER LAKE DOCK REPAIR

The WSPA Board is engaged with the owner of the dock at Spencer Lake to facilitate improvements we all want. A few weeks ago we noticed that the dock was coming apart and that there were nails and bolt protruding from it ready to rip our floats. Temporary repairs have been made and we are working with the owner to turn it in to a truly proper seaplane dock. WSPA is pressing for deep fascia boards and tire bumpers. We are looking at other bumper systems as well. Go to Spencer Lake and get a meal or a soda at the restaurant. Fly Nice. Be neighborly. Thanks to Kevin F and Mark M for helping with this.



SEAPLANE HAPPY HOUR

About a dozen Seaplane Pilots met for a few hours on Monday June 12th at bar Charlie on Stone Way. Bar Charlie is the only Seaplane Themed Bar in Seattle, with a seaplane prop on one wall and a R985 engine on another. Thank you to James Young of Seaplane Scenics for organizing this pop-up event. Several of us had been flying that day and we had lots to talk about. Jack and Austin represented WSPA. Brad and Cameron from Rainier Flight Service were there. Kit from Seattle Seaplanes was there too. It was a good cross section of the community. Let's do more of these. You get to learn stuff we will never publish.
<http://www.barcharlieseattle.com/>



INVASIVES IN ALASKA

<https://www.adn.com/opinions/2017/05/08/aquatic-invader-threatens-alaska-lakes-salmon-floatplane-traffic/>

Author: Tobias Schwoerer May 8, 2017

Invasive plants and animals are gaining a foothold in Alaska. They are slowly but relentlessly changing our environment and economy — changes that most people are unlikely to notice because they occur over long periods.

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In other parts of the world, invasive species have already damaged the environment, harmed human health and caused significant economic losses. Alaska, by contrast, had relatively few biological invaders for most of the 20th century.

But things have changed. Alaska now has many invasions in their initial stages. The most threatening right now is elodea, a freshwater aquatic plant.

Elodea is commonly used for vegetation in aquariums, and it is likely that people emptying their aquariums into Alaska's waterways triggered the invasion. First discovered in waters near residential areas and elementary schools in Alaska towns, elodea spread rapidly in slow-moving water or ponds.

If elodea spreads further, it will likely reduce salmon spawning and rearing habitat and compromise the long-term health of Alaska's salmon stocks.

INNOVATIVE, NOSTALGIC PLANE MAKES STOP IN JUNEAU

By ALEX McCARTHY Juneau Empire

<http://juneauempire.com/news/2017-05-04/innovative-nostalgic-plane-makes-stop-juneau>

A twin-engine piece of nostalgia touched down in Juneau on Thursday enroute to the Alaska Airmens show.

Two decades ago, Seattle aeronautical engineers Ben Ellison and Ross Mahon began to design a plane that honored the form of a vintage seaplane while using modern materials. Now, that plane — dubbed a “Gweduck,” jokingly named after a saltwater clam — is a reality, and is flying from Seattle to Anchorage.



Standing next to the plane as it rested on the runway at the Juneau International Airport on Thursday, pilot and friend of the designers Karen Stemwell recounted the history of the aircraft.

“One thing led to another,” Stemwell said. “They kept going one step at a time, halfway thinking it might be a reality, but it could end at any point, and 15 years later, they had the airplane sitting on the Tarmac.” The Gweduck has created a stir among aviation enthusiasts, because of its nod to aircraft history and its innovative design. The plane’s design is akin to a Grumman Widgeon, a seaplane that was popular in the years following World War II. The aircraft was especially beloved in Southeast Alaska, where seaplanes are used frequently to hop from island to island.

News of Ellison and Mahon’s project spread quickly among pilots and aviation experts, and many have joined the movement. Whether they’ve helped test the equipment, help with the design or order parts to the plane, people from all over the Northwest have found ways to get involved.

Burke Mees, who is currently a pilot for Alaskan Airlines, used to fly Grummans in Southeast Alaska, and jumped at the opportunity to join the group that was putting this plane together.

“It’s just a part of aviation history that’s kind of come and gone at this point,” Mees said. “These guys have copied the basic Grumman design, but they’ve used all new materials. ... They’ve incorporated a lot of advances in seaplane design into this. They’ve kind of updated the traditional Grumman design.”

Perhaps the most impressive twist in the design is the fact that the airframe (basically the outer shell) doesn’t corrode in saltwater. The vast majority of seaplane pilots face a never-ending battle against corrosion, but the Gweduck won’t have that problem. Both Mees and Stemwell pointed out that the corrosion-free aspect of the plane is noteworthy.

The name is also a bit noteworthy, as it’s meant to be a bit of a joke about the usual names of seaplanes. Traditionally, seaplanes are named after water birds, such as the Widgeon or the Grumman Albatross, and someone involved with this project suggested that they name it after a geoduck, which is an edible and objectively unattractive saltwater clam.

“It’s kind of a shame to name a really slick, elegant new seaplane after a mud-dwelling clam,” Mees said, “but that was kind of the inside joke to that.”

The Gweduck, piloted Thursday by Mahon, is making a bit of a tour through Southeast Alaska now, and put on a show in the Gastineau Channel by downtown Juneau on Thursday. With the backdrop of bright blue skies, the white plane circled the city and made a splash-landing in the channel.

The plane seats six, and included Mahon, Mees, Stemwell and others Thursday. Among the passengers on the fairly roomy plane was Walter Fellows, who is a kit plane partner who helped manufacture the plane. Fellows explained that beyond the nostalgia, the Gweduck is actually a practical and useful craft. The current plane is the only one yet produced, but there will be more in the coming years. Fellows said people have already been clamoring for it, for various reasons.

“Some people want to use it as sort of an adventure camper,” Fellows said. “It’s big enough that you could sleep a couple people back there. Some people want to use it for fishing and hunting. If you have a home on the water somewhere and not much in the way of roads, you need a big useful load to bring family, food and everything else.”

The success of the craft is fairly astounding to those in the development group. Mees laughed frequently as he talked about the unlikeliness of this plane becoming a reality, especially considering that it started as somewhat of a pet project done in Ellison and Mahon’s spare time.

“It’s kind of the American tradition of a backyard project, almost,” Mees said, “but there’s nothing amateur about it.”

WSPA AT ALASKA AIRMENS SHOW

Several WSPA members attended the Alaska Airmens show this year. We congregated at the SPA booth and several of us who are SPA WA Filed Directors actively worked the booth during the show. None of us won the raffle for the Super Cub. It was warm spring weather in Anchorage and we arrived back home to winter in Seattle. Lake Hood was just starting to come alive for the season and during the week we got rides in a few planes including the Goose.

Show in picture are:

John Pratt, SPA AK Field Director
Karen Stemwell, WA SPA Field Director
Austin Watson WA SPA Field Director
Phil Lockwood, SPA President, AirCam Inventor
Steve McCaughey SPA Executive Director
Vern Kingsford, DPE, Alaska Float Ratings
Tom Bass, Alaska Cabins Website Author



LEARNING

SAFETY TRAINING - ROUGH GLASSY WATER – WHAT’S THAT?

By Austin Watson, CFI

People sure get a quizzical looks their faces , when I ask them if they have ever landed on Rough Glassy Water. The looks span from, “That’s dumb. You cant’ have both”, to “Did I miss something in my training?”, to the occasional jolt of “Oh Yeah I remember that very bad day”. Mostly it’s rolling eyes and a return to talking about sports.

I’ve been scratching my head on the topic of Rough-Glassy water for two years since my several bad days dealing with it and trying to come up with an article and some guidance on what it is and how to deal with it safely. Well, it’s summer-like in Seattle again and Rough-Glassy Water is back to ruin our days, so here goes, a few words on the dreaded RGW.

How can water be both rough and glassy at the same time? Glassy implies smooth as a mirror after all and rough is big and angry. Glassy implies impaired depth perception. Rough implies wind, waves and a bumpy ride with a very clear picture of the terror confronting you out the window.

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22 Sep 2015 5:44 PM
Anonymous member:

I'm not sure about all the particulars, but I was surprised once on Mason Lake late in the afternoon with long period swells when it was otherwise dead calm. Scared the crap out of me and my passenger!

It was so calm that the water was a mirror of the low scattered clouds and I had no idea how high I was above the water. I had just reduced my descent rate but not quite enough and the last few feet I got the wave reflection out of the corner of my eye and fortunately we skipped off the top of a swell I had just enough power on to pull and add a bit more to skip off the top of the next swell before we were airborne again.

I shallowed the descent rate and was able to make the landing. Once down and having gathered my wits, I was amazed at the size of the swells that we just could not see. Had we had a shallower descent rate it may not have been such a big surprise but that wave action out the corner of your eye is a real eerie feeling.

Here's the setup. Maybe you'll recognize it. It's late in the afternoon on a warm day. The wind has died down for the most part. It could be called sultry. You want to land on your favorite lake. Lake Sammamish is the one I see this RGW stuff on locally, not my favorite lake, but one we must too often use to train students on. Lake Washington between the bridges can be downright dangerous. There are a few boaters out, not too many and they are lazily cruising the lake sipping drinks. Without the boats the water would be mirror glass. With the boats in the mix the water becomes a cross hatch of long swells going every direction in constantly changing cross hatched patterns. You have picked a landing spot and are on final approach low and slow droning along to your touchdown point. The sun is glinting off the tops of the swells and out the front window it looks like you are flying towards a glittering field of diamonds. You squint and pull your cap down lower to no avail. Not having great vision, perhaps you twist and slip sideways just as the water grabs the side of one float and then another and then swells throw you up and down as you bob around in panicked chaos, stomping on this rudder and that and twisting the yoke back and forth to no avail. Eventually you do stop and take pause to look around. Everywhere you look swells seem to be coming towards you. Thankfully a wing tip didn't get caught in the water and pull you over when you landed sideways in this stuff. What the heck happened there? Now what?

You have just encountered Rough Glassy Water (RGW). First, it was a surprise when you touched down, and then second, your plane was bouncing every which way afterwards.

Tips for dealing with Rough Glassy Water:

1. Be aware that it exists. Look at the water before you land and determine if the swell pattern, surface texture and sky conditions exhibits characteristics of glassy (difficult to perceive depth) and rough (Swell amplitude greater than $\frac{1}{2}$ total float depth).
2. Avoid if possible. Do not go there without a reason in an inappropriate seaplane unless you can explain why to the FAA/NTSB if you need to. Go another time or land somewhere else.
3. Wait for the swells to clear. Just go fly around for a while.
4. Put the sun to your back. The least you can do is get the sun out of your eyes.
5. Land perpendicular to a single swell pattern. Split the corners on a crosshatch swell pattern.
6. If there will be less than three swells per length of your float, see (2) Avoid! This is a formula for putting a float tip into the water and shortly thereafter putting your tail into the water and you going swimming.
7. Keep some power in during landing to (a) facilitate rapid go-around, (b) counter hydrodynamic drag and increase controllability.
8. Consider landing in trail of a recent boat passage. Often the water is relatively -smooth there between the outgoing wakes. Just don't land roaring up some poor boater's backside. That can lead to a whole different difficult conversation with the authorities.

There you have it, My first published words on RGW. If you have further thought, please pass them along so I can turn this into a full length article for Water Flying. They are waiting. I promised them an article two years ago. Better pictures would help so send them to me as well. Thank you goes to several seaplane instructors who discussed this topic with me, in particular, Mike Kincaid (ID), John Gowey (WA), and Burt Meese (AK).

I received this follow up when I shared the prototype article for review.

I had that happen at Mason Lake. It was a total surprise. I'd set up for a glassy water landing and you could see the scattered clouds reflecting in the water, a perfect mirror. I had NO CLUE about the swells until a nanosecond before we bounced off the top of a swell. In that nanosecond, we got this disorientating sensation from our peripheral then bam – a little added power and we were able to skip off the tops of the next few swells and settle in. We didn't figure out what happened until we settled in and then we could see the swells. They were totally undetectable from just a few feet above. Mason is a big lake and we didn't see any boats that could have caused that, but waves like that last a long time and reflect of the sides of the lake. Bruce Hinds

BOOK REVIEW, HOW TO READ WATER, Clues and Patterns from Puddles to the Sea

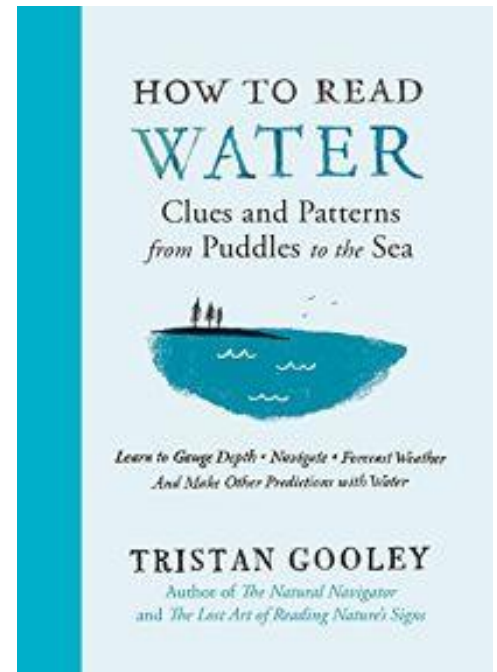
By Tristan Gooley, © Secpter 2016 ISBN 978-1-61519-358-5.

As seaplane pilots, we should all read this book. I'm working my way through this book and am already a better reader of water, one of the early lessons for any seaplane pilot, also an ongoing lesson we can never know enough about. The book is 390 pages and a tome of information. I've barely gotten through 124 pages as I slowly read and reread bits of it to get the point. The book is available in the Seattle Public Library and of course for purchase on Amazon and elsewhere.

[Here's a real review by a real reviewer.](#)

In this enthusiastic, if esoteric, volume, Gooley (The Lost Art of Reading Nature's Signs), a fellow of the Royal Geographical Society and Royal Institute of Navigation, diagnoses humans with a lack of fascination with water and sets out to rectify this situation. He examines water in its various liquid forms, pointing readers toward the "physical clues, signs, and patterns to look for in water, whether you are standing by a puddle or gazing out across miles of ocean." For example, Gooley identifies various types of puddles—including low-point, tracker, and navigator puddles—and reveals the reasons behind the ways they form, such as the ground beneath them, or the local flora and fauna. Similarly, he explains the differences among ripples, waves, and swells in larger bodies of water. Readers should be prepared for the occasional technical discussion, as when Gooley gives a rundown of the individual layers of water in a lake—epilimnion, thermocline, hypolimnion—and outlines an experiment readers can do at home to further explore them. The minutiae may turn off some readers, but avid and budding outdoorspeople will appreciate Gooley's breadth of knowledge and accessible approach to his subject. Agent: Sophie Hicks, Sophie Hicks Agency. (Aug. 2016)

<https://www.publishersweekly.com/978-1-61519-358-5>



OTHER BOOKS BY GOOLEY

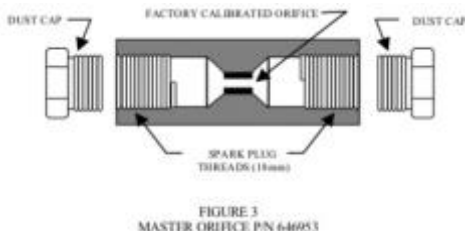
- [The Natural Navigator: A Watchful Explorer's Guide to a Nearly Forgotten Skill](#)
- [The Lost Art of Reading Nature's Signs: Use Outdoor Clues to Find Your Way, Predict the Weather, Locate Water, Track Animals and Other Forgotten Skills](#)
- [The Natural Navigator: The Rediscovered Art of Letting Nature Be Your Guide](#)

ANSWERS TO COMMON MAINTENANCE QUESTIONS - The Compression Test

By Eric Ellison, Kenmore Air

The compression test is something your mechanic does at every annual and 100 hour inspection. It is a valuable diagnostic tool, the results of which can be easily misunderstood. Mike Busch has written an excellent article on the subject for Cirrus Pilot Magazine titled "The Dreaded Compression Test". I suggest reading his article, it's right on the money. What I'll attempt to give you here is the sweetened condensed version.

You've no doubt heard that 60/80 on a compression test is the low limit for any one cylinder, and that anything lower requires pulling the cylinder for repair. This general rule of thumb has been around for ever, and can also be found in the FAA's Advisory Circular 43.13-1B. This is the document mechanics use as an accepted reference when no manufacturer's data is available. TCM however, provides compression test guidelines in their Service Bulletin "SB03-3", and goes into much more detail than the 60/80 rule of thumb. In this service bulletin, and it's previous iterations, TCM introduced a "master orifice" which, when connected to the compression test equipment, provides a calibrated leak, and sets the lowest allowable limit on a compression test. With most compression testers this will be in the 42-47/80 range. The SB then provides a series of inspections for the mechanic to perform to determine the cause and seriousness of the leak.



Determining the source of a compression leak is really where the diagnostic work begins. There are five main causes: 1) Piston rings 2) Exhaust valve 3) Cracked cylinder head 4) Cracked piston 5) Intake valve. Of these probable causes, the exhaust valve and piston rings are most often the culprit. A quick listen at the exhaust pipe, engine breather, and induction inlet gives the first clue to where the air is escaping. If the cylinder is below the no-go limit a borescope

inspection is in order. There is a recognizable pattern associated with burned valve, and several of the other defects listed above can be identified visually as well.

If the borescope inspection shows a normal heat pattern on the exhaust valve and no other obvious sources of a compression leak (cracked head, cracked piston, etc.) then the aircraft should be flown at 65 to 75 percent cruise power for at least 45 minutes and the test repeated. Only if it fails the second test, should the cylinder be removed. It's important to remember at this point that following the TCM service bulletin could allow a cylinder with a compression rating in the mid 40s to be

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GREEN MEANS STOP



First indication: Circular color pattern is slightly uneven and nonsymmetrical.



Crescent-shape, discolored burn pattern developing at upper edge.



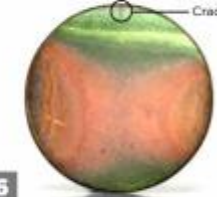
Burn pattern migrates inward.



GREEN MEANS STOP. The green area at the top shows this valve should be replaced immediately. (Note how the uneven burn patterns match the heat distribution chart.)



Green crescent progresses toward center with valve cracking and failure is a serious danger.



Crack at 12 o'clock shows valve failure is imminent.

completely airworthy. Also important to remember, is that the compression test is a diagnostic tool and does not necessarily indicate what the engine is doing when making power. The 80 PSI used in the test is an order of magnitude lower than the 800-1000 PSI the cylinder sees during combustion.

Sources:

“The Dreaded Compression Test”, Mike Busch, Cirrus Pilot Magazine, Sep/Oct 2007

“Anatomy of a Valve Failure”, AOPA Air Safety Foundation

“SB03-3”, Teledyne Continental Motors

“AC43.13-1B”, FAA

Eric Ellison is an A&P IA, Private Pilot, and the Chief Inspector at Kenmore Air Harbor.

WSPA

MEMBERSHIP REPORT

WSPA continues to grow its membership. We add a few new members each month. 142 of our prior members are lapsed. We look forward to their renewing soon. The DUAL WSPA/SPA membership remains popular with those wanting to save a few dollars or just join once. It does require some diligent process management to make DUAL work so inform us if something goes awry.

Category	Active / Paid	Lapsed	Total
MEMBER	138	128	266
DUAL WSPA/SPA MEMBER	66	14	80
LIFETIME	1		1
TOTAL	205	142	347

SEAPLANES ON SOCIAL MEDIA

If you aren't following seaplanes on social media, rethink it. Pop-Up splash events are posted and breaking news about closures or safety concerns (FLOATAMS) show up there when you need them and way before you'll see it in a newsletter or magazine. There are several groups on Facebook including WSPA and SPA, Left Coast Amphibs, and South Sound Seaplane Pilots

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Bruce Hinds

NEWSLETTER EDITOR HELP NEEDED

After six years of editing this newsletter, We need help moving forward. If you are competent with Word or Pages and willing to help collect and assemble WSPA newsletter content on an ongoing basis, please contact austin.watson@ieee.org. This is a great **opportunity for an internship**. Good work will be rewarded.

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