Bend Aero Modelers

Flight Report

February 2025

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It is with a heavy heart that we have word of the passing of long time member and recent Emeritus recipient Jim Young. He will be missed.

Next Meeting Take Note!

Next Meeting

Wednesday February 26, 2025 at Black Bear Diner at 6:30. Come early for food and plane talk

FROM THE PRESIDENT

by Bill Broich

It has been a tough winter for getting out for some flying. I've only made it out twice this past month, but both days were great, even with it being cold. While we are not out of the woods yet, weather wise, it will be getting better soon. I have determined that I need to spend some time on Real Flight, or I sense a disaster in the making.

I have continued making contact with asphalt repair companies to get the best path forward for runway repair and regular maintenance. Last Friday Dennis and I met with Tri County Paving out of Redmond. They agree that cutting out the sections around the cracks would end up causing more problems than it would solve. Also, in his estimation seal coating the entire surface after the repairs isn't necessary. The last time we did it, about three years ago, is holding up very well. He suggested revisiting that in two years from now. Their estimate for the repair of the 13 major cracks and the other secondary cracks would be XXXXXX. I was hoping to have that estimate in time for this newsletter, but I haven't received it yet. I should have it for the meeting this week.

For comparison Advantage Sealcoating's estimate for similar work was $3,850. Also, for reference purposes I asked for an estimate from Advantage to seal coat and restripe the entire surface. That estimate was $5,327. We need to keep that in mind for expenditure down the road.

We will have the final discussion on this at the next meeting, and will make a decision which way we want to go. This is the main tangible asset the club has, and maintaining it is the first priority.

Member Profile

I have been soliciting our members for profiles of their aviation related experiences. We have a lot of very interesting characters in our club, and I am interested in their stories. After much arm twisting I convinced our Treasurer Dennis McMahon to give his story.

Born in Klamath Falls, Oregon, near Kingsley Field, he developed an early interest in aircraft and the Air Force. Unfortunately, getting glasses in 6th grade, his desire to become a pilot was eliminated. In 1966, he earned a Bachelor's Degree in Business Administration from Southern Oregon College and was selected for Air Force Officer Training School. Commissioned in January 1967, he served as a Minuteman Launch Officer in the 90th Strategic Missile Wing at F. E. Warren AFB. Cheyenne Wyoming. It was a position of intense training and evaluation to ensure that the 10 nuclear-tipped Intercontinental Ballistic Missiles (ICBMs) for which his crew was responsible would be launched with perfect timing and accuracy if directed by the National Command Authorities. 100% accuracy achieved through compliance with intricate timing procedures had to be the standard to ensure the ICBMs would reach their targets rapidly with no interference with the concurrent missions of Air Force B-52s and the Navy's Polaris missiles. He was selected as a crew instructor and was upgraded to Crew Commander as a 1st Lieutenant, a very rare placement, ahead of several wing officers his senior.

In 1970, he earned his Master of Business Administration degree from the University of Wyoming. The Air Force also sent him to various levels of professional military education over the years of his career. He was selected as the 90th Wing Missile Safety Officer and subsequently entered Missile Maintenance Officer technical training and reported to the 341st Strategic Missile Wing, Malmstrom Air Force Base, Montana, as a Combat Targeting Team Chief. With his background and experience, he was rapidly selected to become an instructor. He earned the ICBM Master Team Chief Award and was soon appointed Officer in Charge of the Wing Team Training Branch, responsible for training all the disciplines that maintained the 341st's Minuteman weapon system. In June 1975, Air Force Systems Command reassigned him to Vandenberg AFB, CA's Space and Missile Test Center, which provided ICBM testing and national defense satellite launch services. In this role, he provided management surveillance of the contractors operating the Air Force Western Test Range.

In July 1978, he returned to the 90th Strategic Missile Wing, holding various positions of leadership, culminating as Chief, 90th Strategic Missile Wing Maintenance Control Division, where he was responsible for managing the alert maintenance of 200 intercontinental ballistic missiles over a 9,600 square mile area located in three states.

In 1982, he was assigned to Strategic Air Command Headquarters, Offutt Air Force Base, Nebraska, where he served in the SAC Directorate of Missile Maintenance as Chief, Evaluation and Training Branch and was then moved up to Chief, Missile Management Division, responsible for the day-to-day management of the nation's 1000 Strategic Alert Minuteman and Peacekeeper missiles. In 1984, he was selected to command the 351st Field Missile Maintenance Squadron at Whiteman AFB, Missouri, directly responsible for ensuring the strategic alert status of the Wing's Minuteman ICBMs. Subsequently, he was selected as Fifteenth Air Force Director of Missile Maintenance at March Air Force Base, California, with alert management responsibilities over the entire command's assigned ICBM wings. During this assignment, he was twice selected to conduct exhaustive, highly technical investigations into a problem which would have caused an alert missile to fail to launch. Personally very familiar with the equipment involved, his recommendations mandated the development of new equipment, ensuring 100% on alert status, now even more important with the decreased number of ICBMs in America's nuclear Triad.

In October 1989, he was selected as Commander of the 394th ICBM Test Maintenance Squadron at Vandenberg, (the follow-on organization in which BAM Member Emeritus Tom [Trouble] Schramm) served during his Air Force service). The unit was responsible for the safe and effective operation of billions of dollars' worth of operational missile research & development facilities to ensure the successful launch testing of several Minuteman and Peacekeeper ICBMs. The missiles are drawn annually from the nation's operational missile wings for the 7,800 mile flight down the Western Test Range to the Kwajalein Atoll target area for accuracy scoring. Subsequently, he was then moved up to command the three squadrons comprising Vandenberg's 310th Maintenance Group.

In July 1993, he was selected to form the initial cadre of Air Force Space Command's reactivated Headquarters Fourteenth Air Force at Vandenberg, instrumental, with his base connections, in providing offices, communications, etc. in support of the command's worldwide mission. The unit was responsible for both the Air Force Eastern and Western Test Ranges as well as the bulk of the organizations operating the nation's military satellites, essentially forming the nucleus of the United States Space Force, eventually formed in 2019. During this assignment, United States Air Forces Europe selected him to serve in 1995 to deploy for a four- month tour under 16th Air Force, Aviano, Italy, as Commander of San Vito dei Normanni Air Station, Italy, providing logistical and combat support services during Operation Deliberate Force for Joint Special Operations Force 2. The unit consisted of US Navy SEALs, Air Force Pararescue Forces and Army Rangers. As commander, Colonel McMahon was able to accompany the Special Operators flying the unit's AC-130 Gunships and MH 53 Helicopters as they performed missions of Close Air Support and Combat Search and Rescue during the war in Bosnia.

He retired as a Colonel in 1996 to Bend, having moved 18 times over the course of a 30-year career and joined Eastmont Church, working as both paid staff and volunteer for 10 years. He served on the Elder Board and Building and Grounds Committee, and as Office Manager, he helped the administrator and pastoral staff in problem solving and coordinated the scheduling of facilities for the church, school, and outside organizations. He served on the Finance and Risk Management Committees as well as being an adult Sunday School facilitator and Head Usher. He also became a licensed insurance agent for AFLAC and American Heritage Insurance companies, active for ten years.

In addition, he served for several years as Board Member and Treasurer for Caring for Troops, providing dozens of monthly care packages for Central Oregon's deployed troops. Since 1996, he has served on the Board of Directors of the Central Oregon Chapter of the Military Officers Association. During his tenure, he served as the organization's Secretary, Newsletter Editor, Treasurer, Chaplain and President. Furthermore, he served as Treasurer on the founding board of the Bend Heroes Foundation. The organization raised all the funds needed to fly over 300 WWII veterans on all-expense paid, 4-day Honor Flight visits to Washington DC. He flew on two of the flights and personally served as Team Leader on one of the flights for his 30 assigned veterans and their sponsors. His hobbies include flyfishing and fly-tying and he has served for several years as Treasurer for his local radio control aircraft club, Bend Aero Modelers.

He is married to Carolee and has two daughters, Cara Mortensen with grandson Jett and Rachel Price and her husband Andrew with grandsons Fletcher and Boden, all in Golden, Colorado. Also, Carolee's daughter Lynnette Konop and her husband Pat and two children Ryan and Molly live in Redmond, Oregon.

SHOP TALK

Lipo Batteries in the Cold Weather

By Joe Newman

I recently had an interesting experience flying my EDF Jets during January. As everyone knows, most of January has been relatively warm in the Bend area (for January!) so several club members including myself have taken advantage of the weather and flown a few times. I was trying to improve my experience from last year when I didn't fly (weather and travel) for about 3 months and my flight experience in early spring reflected the accumulated rust.

Getting back to my recent January experience, I arrived at the field around 10 am with the temperature hovering around 38 degrees F and pulled all my gear and planes from the car. The previous night I had fully charged the batteries I had planned on using the night before.

On my first flight with an EDF Jet (Avanti V2) I immediately noticed the aircraft required a much longer rollout on take-off than I remembered the last time I flew. After retracting gear and flaps and taking a couple of easy laps around the field I tried two high speed passes and again noticed the speed wasn't as robust as I expected. Looking at the timer on my transmitter I was down to just a minute of the normal 3 minutes 30 seconds flight time so I decided to land. The timer had about 20 seconds remaining before reaching zero. Based on many previous flights, I would expect the battery to have between 25% and 35% remaining charge which depended on the amount of throttle used during the flight.
Checking the battery after landing showed the charge was 15%. I didn't worry too much about this outcome as it was one of my older batteries. Six more flights with three different jets and various 6S Lipo batteries ranging from 4000 MAH to 5200 MAH, and from 50C to 100C yielded similar results with remaining battery charge below 20%. Battery ages ranged from 6 months to 3 years months. I started thinking about this unexpected outcome and did a little research the next day. Below is brief summary of what I found:

Lipo batteries loose about 20 percent of their power when the temperature approaches 32 degrees. This is because the chemical reaction within the battery is inhibited somewhat by the lower temperature. Since I don't believe everything I read on the internet I decided to test this. I started by charging one of my 6S batteries, installed it in my Avanti Jet then hooked it to my luggage scale (very handy when checking actual thrust of your model in a static state). I recorded the thrust which was 5.5 lbs. Next, I recharged the same battery and then let it sit in my garage which was about 39 degrees and performed the same thrust test. The outcome was 4.4 lbs. which is about 20% less. I checked another battery in the same manner and came up with an 18% lower thrust when exposed to the lower temperature after fully charged.

Next, I wanted to check the endurance of the battery comparing performance differences due to temperature. I again fully charged the battery but this time ran it at about 75% throttle for a normal flight time of 3 minutes 30 seconds. Again, using the same battery I found when the battery is not exposed to the colder weather it outperformed the cold battery even though both were fully charged. In this case, the warm battery had 37% battery charge remaining after the test, the cold battery was 18% or 19% less.

Summary:

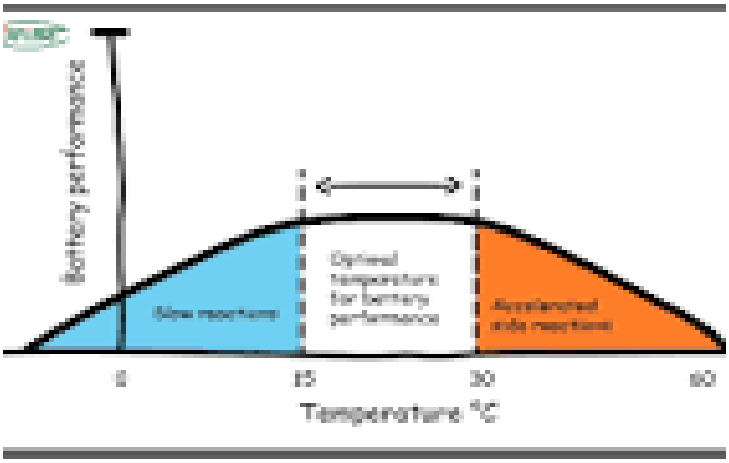
LIPO batteries are sensitive to temperature variations and loose both power and endurance when the temperature drops below 40. If you read some of the available research on line; using a battery in freezing conditions is not recommended and allowing a battery to freeze will certainly limit the lifespan and performance of the battery. (Just research the topic on Google!) Also, charging or storing batteries in extreme cold (or hot) conditions is not recommended as it negatively impacts the batteries ability to generate electricity and may result in a ruined battery or a fire. Charge and store your batteries at room temperature.

On a more practical level, I reduced my flight times by about 30 seconds on all of my planes. This has resulted in charge levels averaging 35% after conclusion of a flight. I will change these flight times back this spring when the weather warms up! Also, simply leaving your batteries in your vehicle (as it is sure to be slightly warmer when arriving at the field) until you are ready to use them might preserve performance a bit longer. Keeping them out of the sun and not in your vehicle during hotter months is likewise a good idea.

I have inserted a more scientifically researched table showing LIPO battery performance ideal range is between 15C and 30C or 59F and 86F. Any temperatures above or below cause battery performance to decline as the chart illustrates. (Source is Google Search with AI result)

We have had some wonderful flight days in January with little wind and manageable temperatures so I hope to see more people out there enjoying flying weather and schedule permitting!

Editor note, sorry for the blurry nature of the chart. It didn't take transferring well. You still get the idea.



Intrepid Member Award

While many of us let the cold weather keep us from venturing out to the field, James proves once again he will not be swayed from getting in some flying. Tell us James, did those RC cars have studded tires at Shaub Lake? I'll let him tell the details.

Decided the day before to go to Shaub because I was bored, and the weather forecast looked good. High temp was in the low 40's and slightly windy. Thought the lake would be dry because there hadn't been any precipitation in a while. Totally didn't expect an ice sheet but still had fun. I think the lake was frozen solid and maybe max depth is a couple feet.

RC Plane Swap Meet
Saturday March 15, 2025

Opens 9am - Closes 2:00 PM
Yamhill Valley Heritage Center
11275 SW Durham Ln
McMinnville, OR 97128

Hosted by
McMinnville Aircraft Modelers mcminnvilleaircraftmodelers.com

Special for 2025 only, Admittance is Free

However, we do encourage participation in the Raffle

Contact info
Mark Anderson
702 591 5633

I am planning to go to this, and maybe spend a little time at the Evergreen Air and Space Museum. I can take up to three additional members, if interested.

Bill

MEMBER'S PROJECTS

Club member Steve Renfro submitted this clever idea. I am always looking for ways to tidy up all the servo leads and antennas in my planes this is a great inexpensive way to accomplish that.

Hi Bill, So I don't know if you want to use this but I have another modeling tip for people using diversity antenna receivers. I bought black hollow 5" coffee stir sticks, 150 for $4 on Amazon. I use them for antenna guides, after determining receiver placement then I install the antenna guides to get the antennas going where I want them. Steve Renfro

BAM Bulletin Board

Even more space to sell stuff!!

Safety Report

Bend Aero Modelers

Bend Oregon | AMA District XI | AMA Charter 2311

General

1. All pilots shall be current members of AMA. Proof of current AMA membership is required prior to flying at BAM.
2. Visiting AMA pilots and new members of BAM shall receive a safety orientation by one of BAM's Safety Committee members or in the absence of a Safety Committee member, an Executive Committee (EC) member prior to their first flight.
3. Pilots Shall ensure flight operations in accordance with AMA's safety code and these Field Safety Guidelines at all times.
4. Pilots shall ensure proper operation of their aircraft and associated equipment prior to use.
5. Pilots shall show courtesy toward others and apply common sense when flying at BAM.
6. Pilots are encouraged to verbally enforce safe flying practices as appropriate.
7. All guests, spectators, children and pets shall be supervised by a BAM member at all times while in side the flying field fence and are encouraged to remain behind the pit tables.
8. When working on armed electric airplanes in the pit area, pilots shall always secure/restrain the aircraft from moving on the ground or rolling off a pit table. No rotating propellers are allowed.
9. No running fuel airplanes are allowed in the pit area.
10. R/C cars and other surface vehicles are prohibited anywhere inside the flying field fence.
11. Smoking is prohibited anywhere inside the flying field fence and shall be carried out in a safe and respectful manner in the parking lot.
12. Consumption of alcoholic beverages or controlled substances before or during flight is prohibited.

Pre-Flight Operations

1. Pilots shall use the run-up stands when starting fuel-equipped aircraft engines.
2. For larger aircraft, pilots may use the taxiway rather than the run-up stands to start or arm their aircraft while keeping it restrained with the help of another pilot or any reasonable means.
3. For extended engine tuning and troubleshooting, pilots shall use the run-up stand provided for such use at the West end of the field by the porta-potties.
4. Pilots shall never leave their aircraft unattended while the aircraft is running or armed, even if it is restrained.
5. Pilots that use AM/FM radio equipment (50MHz, 53MHz and 72MHz) shall attach the appropriate frequency pin visibly to their transmitter's antenna whenever in use and shall place their AMA card on the respective channel pin on the frequency board in the clubhouse.

SAFETY REPORT continued

POPP'S FIELD SAFETY GUIDELINES

1. Pilots shall taxi aircraft only on the taxiways and runway. No taxiing is permitted in the pit area.
2. While flying, pilots must remain behind the safety fence and never block the taxiways.
3. Only pilots or a supervised helper are permitted beyond the safety fence (ie, to retrieve an aircraft).
4. Pilots shall verbally communicate their intentions during takeoffs, landings, flights and emergencies (ie, "taking off right to left", "landing left to right", "on the runway", "dead stick", "low pass" etc.
5. Pilots shall always fly their aircraft North of the centerline of the runway and remain within the approved fly zones. (see Fly Zone Map for details).
6. Landing aircraft have the right of way. Dead stick landings shall be called as such and given immediate right of way.
7. Pilots shall not take off from or land on the taxiways. This applies to all aircraft types, including rotary-wing and micro aircraft.
8. No more than five (5) aircraft shall be in the air at one time. This includes rotary wing and micro aircraft.
9. Pilots shall call all maiden flights prior to flight. All other aircraft shall be grounded until the maiden flight has been completed.
10. All hand launches shall be called to alert other pilots. Hand launches shall be performed either from the runway or the area between the runway edge and the safety fence.
11. Hovering craft such as, but not limited to, 3D planes, drones, etc are to hover North, clear of the runway to avoid interference with fixed wing aircraft operations. Whenever 3D planes or drones are flying, it is recommended to do so when fixed wing aircraft are not in the air.
12. FPV (First Person View) flight is only permitted when the pilot has a spotter per AMA regulations.
13. Gas turbine operations are allowed as long as they are in accordance with the AMA Gas Turbine regulations on the AMA website.
https://www.modelaircraft.org/content/ama-gas-turbine-program
14. When gas turbine planes are being flown, all other pilots are encouraged to relinquish the airspace to the turbine operations. An agreement between the turbine pilots and all other pilots for this recommendation should be discussed and agreed to.
15. All planes that are reconstructed after a substantial crash incident shall be considered as doing a maiden flight and all considerations for a maiden flight shall be adhered to.
16. If there are any questions that are not addressed here, the AMA Safety Handbook is available for reference at https://www.modelaircraft.org/safety

Updated 12/17/2022 By Safety Officer Andy Niedzwiecke

Academy of Model Aeronautics
National Model Aircraft Safety Code

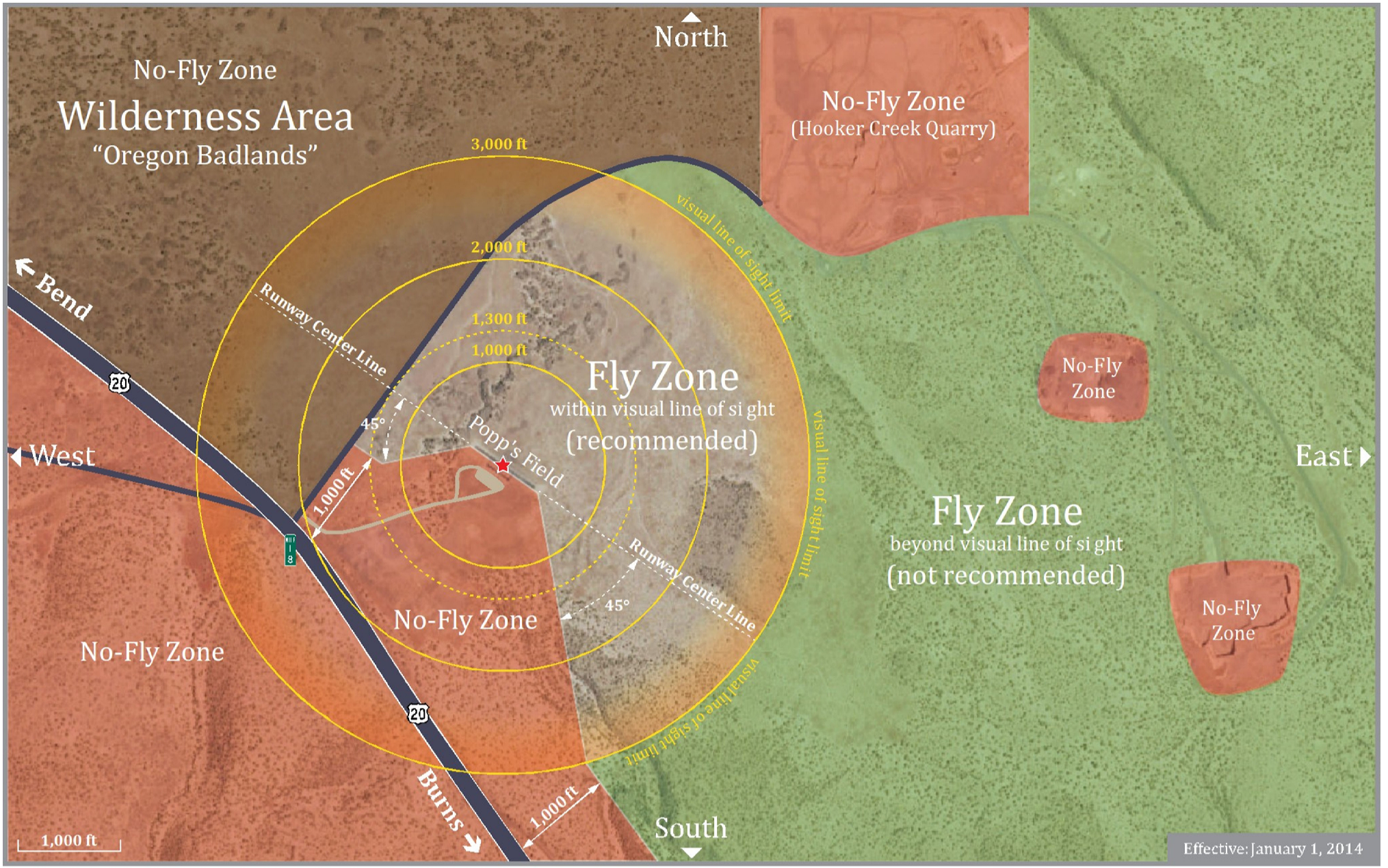
Effective January 1, 2018

A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraft using AMA's See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

For a complete copy of AMA's Safety Handbook please visit:
modelaircraft.org/files/100.pdf



★ Popp's Field: Latitude 43° 56' 42.34" N / Longitude 121° 1' 16.21" W

No-Fly Zone Wilderness Area (No-Fly Zone)