

## N513MM Alaskan Bushwheel 26" Heavy Treads

During the annual, Alaskan Bushwheel 26" Heavy Treads were installed! These tires provide a safer design for everyday use and advance the aircraft's capability for backcountry training. Due diligence in preflight preparation and staying proficient are characteristics of any good aviator. Training for upgrades and refreshing our skills will result in a positive experience for all cub pilots. With that in mind, details of our most recent upgrade and operational implications of this upgrade can be found below.

### Preflight of Tires:

- These tires can be used in a range of 8-20 PSI. We are going to start with 15 +/-3 PSI as recommended by both the TacAero maintenance team and pilots during conversations after our annual was completed. The lower we run the tire pressures, the more capable they are in the backcountry environments. The higher we run them, the longer they will last on pavement. Because we live on pavement at KRNT, I would like us to continue at 15 +/-3 PSI to test and decide if this is the range we want to keep. I am open to feedback from all of you.
- Valve stems are integral to the tire sidewall and do not interface with the hubs. We no longer have to worry about the valve stems staying perpendicular or shearing on the hubs. Because we do not have to check valve stems on every preflight and the cotter-pin was in place after maintenance, we felt it was acceptable to put the hubcaps on to keep dirt and debris out of the hubcaps. During routine maintenance, we will remove the hubcaps and inspect the cotter-pins.
- These tires do not have the same wear indicators as the Goodyear tires. We will know these tires are no longer safe to fly when we see cord. As a maintenance note, tires will be periodically rotated to ensure even wear pattern.
- As mentioned above, these are Alaskan Bushwheel 26" heavy tread tires (if you want to research further). The diameter is a true 26" as compared to the Goodyear 26" tires, which are closer to approximately 23" (both unmounted tire measurements). This means the airplane now sits about 1.5" taller, all other variables aside (tire pressure, aircraft weight, etc.). This change in the radius will be noticed in the sight picture and can be felt when stepping on the tire to pour fuel back in after sampling and while checking the VGs on the leading edge.

### Ground Handling:

The heavy tread will wear better on pavement than the normal Alaskan Bushwheels, however, the following ground handling procedures must be considered:

- Turning on the ground with the tow bar: **both tires need to be rolling at all times.** Tight turns even with the tow bar will result in excess wear of the tires (can be seen as a circular pattern on the tire on the turn spot). Make sure to check both tires to see rolling movement.

- Taxiing: When at all possible (unless in a very confined space) the aircraft should be moved under power with both tires rolling. Once again if a brake locks one of the tires, excess wear will result. Please make sure not to power-turn the aircraft on one tire (in the runup box or in front of the hangar, as examples) -- large radius turns are key where space allows. We want this habit to be carried over in other environments.

### Grass and Overall Operations:

- Grass operations not only prolong the life of the tires, but allow us to see students' development of directional stability during landings in a less risky environment. The grab on pavement with lower pressures in these tires with an increased contact patch is something we all need to be aware of.
- For overall operations: Limit touch and goes and repeated pavement operations as much as possible. The reasons go along with why we want everyone on grass as much as possible, especially in the summer when we have more grass options to choose from.
- Preferred Operation: Full stop landing and taxi back on grass, or full stop and go when safe. We understand the soggy spring this year and operational limitations of the training environment we have locally. Please use good judgement to make safe decisions for your flight mission and the airplane. After flying home from the annual, Adam and I went to WA84 to practice on grass with the new tires. We flew a low approach over the runway to determine if the field was safe to land. We saw more water on the grass and on both sides of the landing area than we had ever seen before. We decided our best option was to fly west to S50 for full stop taxi backs instead. Of course this was not preferred with brand new Alaskan Bushwheels, but it was safe and appropriate for our training mission that day.

### Wheel Landings:

- Training Philosophy: This airplane is designed to fly slow. Wheel landings are an advanced maneuver that should only be flown once the pilot can safely land the aircraft in the 3 point position considering a variety of runway environments and wind conditions. Wheel landings should be one of the final maneuvers taught and flown by the student prior to the tailwheel endorsement. The FAR does require us to teach wheel landings. We want pilots to feel comfortable and confident with wheel landings, but view 3 point landings as the go to landing for 99% of scenarios in the cub.
- Max speed **70 MPH**: Slower speeds equal less grab and less momentum if the landing is not directionally stable. Slower landings are always our friend in this airplane. 70 MPH is a maximum speed rating, on the side of the tire. For wheel landings, we should be well below and closer to 60 MPH (again, conditions allow for safe operations i.e. crosswinds). Our testing suggest that 60 MPH with full flaps and 1400 RPM over the runway works quite well.

We will pass this information along to all cub pilots, both new and recurring 6 month checks. We will do our best to cover this thoroughly in the checklist and quiz. Regarding the quiz and checklist, we will keep the Goodyear 26" versions as well in case we decide to go back to those tires, perhaps in the winter if we find they wear noticeably better on the pavement (when the grass in our area is less of an option).

Please let me know if you have any further questions or feedback. Matt Smith, Adam Tomlinson, and I are trained on the new tires and ready to teach! We look forward to flying with all of you soon!

Here's to a great summer of tailwheel flying,

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