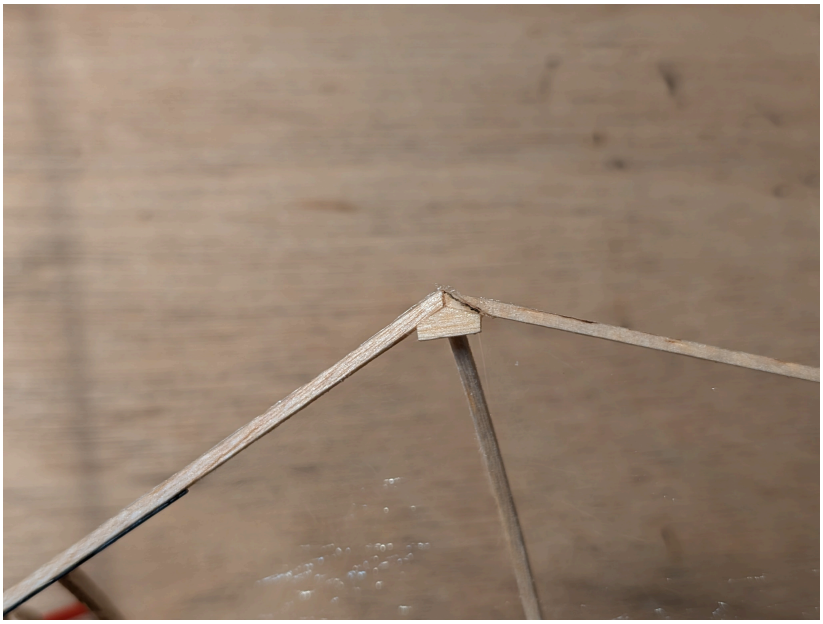
2025-26 Freedom Flight Helicopter Rotor Tip Pitch Changing - Coach Brian

We are finding that adjusting tip pitch on rotors this year with the balsa spars to be much more of a challenge that last year with the carbon spars. Last year, we could just bend hard on the rotor blade TE gusset, using fingernails as a fulcrum, to bend the tip TE up or down. This took 30-60 seconds of hold on the bend to adjust tips about 2-4 degrees up or down. This year, bending in this way seems to just crush the balsa spars thereby weakening the joint excessively. The kit instructions suggest that this gusset joint can be loosened with acetone to allow adjustment. I agree that this would work, but I find that most students struggle to control application of acetone in the correct small amount to loosen a joint like this. If too much acetone gets applied, you will loosen all of the adjacent joints (center rib, inner TE) and also loosen or detach the covering (if the rotor is already covered).



We are making a small diagonal cut in the outer TE spar near the gusset (see photo) and adjusting tip pitch angle while measuring with the FFM protractor and then regluing with a tiny dot of CA. If you don't over apply glue, you can still adjust slightly to get the exact pitch desired before gluing more securely. Make the cut with a very sharp double edged carbon steel razor blade. If this cut procedure seems a little precarious and unsafe, it is allowable to have a coach perform it (per the SO build rules, coaches or mentors are allowed to perform dangerous tool steps for students; ex. bandsaw, etc.).