

RFC Dallas, Inc.
Aircraft Pull-Out and Push-In (Ground Handling) Operations
05/20/2020

This information is provided to the Club Members and Club Check Out Instructors to outline the best practices for RFC Aircraft Ground Handling Operations. While some of this information seems straight forward, many members may not have experienced hangered aircraft in their flying thus far and review of this material may prevent an unnecessary and expensive repair to one of the Club aircraft.

General Items To Cover:

- Both the patio hangars and the T-hangers have obstructions that are only a few feet from the aircraft tail;
- The club has experienced a high incidence of aircraft damage due to “hangar rash”; it is a real problem and happens to both experienced and new members;
- Damage, while sometimes minor, is very expensive to repair;
- The insurance deductible is expensive (to the member) and such damage increases rates to all club members as repairs almost always exceed the deductible amount;
- The aircraft is unavailable to the club (during repair) and may significantly interrupt trips of other members;
- The Club Check Out Instructor MUST demonstrate the ground handling of the aircraft to the member AND should have the member demonstrate those same activities to the Club Check Out Instructor until performance is satisfactory;
- The Club Check Out Instructor MUST ensure that the member is performing the ground operations correctly and must be present for all ground operations until the member has completed the check-out process;
- If the member is flying with other people, have those other people stand back and watch the aircraft tail to make sure it is clear (going in or out). Another set of eyes can be VERY helpful.

Successful Techniques for Patio Hangar:

- Pull-Out:
 - Use the tow bar;
 - Visually check that the aircraft is centered and sufficient space exists between the aircraft tail and hangar support columns; If not, be extra vigilant when moving aircraft OR get help.
 - Pull the aircraft STRAIGHT out until the main wheels are off the blacktop and on the concrete portion of the ramp (and further towards the center line is better) as this will ensure the tail is clear of the hangar structural columns before turning the aircraft;
 - Watch the aircraft Vertical Stab to ensure the aircraft is moving in a straight line.

- Push-In:
 - When taxiing in, try to align the aircraft with the parking space using the rudders and momentum of the aircraft (do not “goose” the engine as you may damage other aircraft and cars with the prop blast debris);

- Use the tow bar and ensure that the aircraft is COMPLETELY aligned with the parking space PRIOR to the main tires leaving the concrete portion of the ramp:
 - Alignment can be confirmed by the aircraft nose wheel on the parking space line AND the vertical stab aligned with the parking space sign affixed to the roof of the patio hangar and centered between the vertical support columns;
 - If not, pull the aircraft straight out onto the concrete portion and REALIGN the aircraft again.
- Once the main tires leave the concrete (onto the blacktop) only push the aircraft STRAIGHT BACK, do NOT attempt to correct any mis-alignment with the tow bar;
- Do NOT look at the nose wheel and the line while pushing the aircraft back - the tracking of the nose wheel does NOT indicate what the tail is doing (laterally);
 - *The best method is to look at the Vertical Stab while pushing the aircraft and keeping it aligned with the parking space and centered between the hangar support columns and only periodically check the nose wheel position to make sure it is tracking STRAIGHT back.*
- Very little manipulation of the tow bar (nose wheel) results in a LARGE swing of the aircraft tail; Don't do it once the main wheels are on the blacktop portion of the space;
- If it does not look right (or centered) STOP, pull it straight out until the main wheels are on the concrete and REALIGN the aircraft for another attempt;
- If there is any doubt that the operation is going well - - STOP - - put the tow bar down, walk around and visually check; Don't guess!

Successful Techniques for T-Hangar:

- Many of the techniques from above apply, please review and understand them;
- If using the powered tug, ensure the member is adequately trained in its' use; If not, do not use it until adequately trained:
 - Maybe it was unavailable during training and initial check-out.
- Double check and make sure that the hangar doors are COMPLETELY open;
- Ensure the aircraft is aligned with the hangar space by having the nose wheel on the line AND the Vertical Stab aligned with the reflective marker on the back of the hangar wall PRIOR to the wheels touching the hangar door rails; This will keep the tail clear of the hangar side walls during alignment;
- When pushing the aircraft IN, make sure the main wheels touch the door rails evenly before pushing over them; this will help prevent the tail from swinging back and forth as the wheels move over the door rails;
- Do NOT look at the nose wheel and the line while pushing the aircraft back - the tracking of the nose wheel does NOT indicate what the tail is doing (laterally);
 - *The best preferred method is to look at the Vertical Stab while pushing the aircraft and keeping it aligned with the REFLECTIVE TAPE on the back wall and centered between the hangar walls and only periodically check the nose wheel position to make sure it is tracking STRAIGHT back.*