

Grob 102 Astir CS rigging - 8/19/2000 (with modifications thru 11/13/01, 6/09, 4/10)

REMOVAL from TRAILER and ASSEMBLY

Trailer Preparation

Open front hatch, remove wing loader, tripod, tail dolly etc.

Unlock rear door and SECURE WITH ROPE to fender to prevent door from slamming against canopy.

Lower fuselage ramp.

Raise front of trailer with jackscrew to lower rear of trailer so that milk crate just fits under rear of trailer; (if rear of trailer is too high wing may scrape when rolled out and lowered onto loader) Disconnecting hitch from car is usually required, in which case it is essential to chock trailer wheel and support rear of trailer with milk crate otherwise when weight of fuselage rolls to rear of trailer the hinged ramp will snap up and scratch bottom of fuselage.

Stabilizer and Fuselage

Unfasten fuselage tiedown strap and remove locking pin from stabilizer rack, store pin on rack eyelet

REMOVE STABILIZER RACK from trailer & hang at front right side of trailer,

CHECK FOR LOOSE spherical locking bolt on tailplane

ROLL FUSELAGE OUT lift only high enough to clear wheel detent, don't hit top of fin

Position fuselage vertical and on centerline of trailer. Position board under tail skid to aid in pushback.

Place chock in ramp track in front of fuselage dolly wheels, remove cloth canopy cover and put in bag

Unlock 4 knurled locking rings for wing connections (should be unlocked after previous disassembly)

LUBRICATE all control fittings and connections, (fuselage, wings, horizontal stabilizer, vertical stabilizer)

Wings

RIGHT WING is assembled first.

The wings can be assembled by a two-person crew without wing loader; optional items are for using wing loader

Lock spoilers by pulling pushrod toward front of trailer before pulling wing out

Push back wing spars about 6" on dolly so end of spar is in center of dolly (front to rear) and long red safety strap for wing is taut. Caution: this is critical to avoid tilting wheels out of track and dropping/damaging wing on metal track.
Once the wing and dolly are slid out of the forward holder the wing must be held vertical otherwise it can tip over to center of trailer damaging wing.

Release spring-loaded pin in track for wing spar dolly.

OPTIONAL: Position Louis loader beside right side of fuselage near wing-locator pin, open side toward fuselage

Caution: make sure it is jacked up high enough and valve is closed to avoid sliding down on post.

Remove wing tip pads from sides of trailer, make sure wing spar dolly tracks are clear!

Slowly roll right wing out rear of trailer (don't scrape wing on side rail of trailer or rear bottom lip of trailer)

OPTIONAL: Maneuver wing out rear of trailer onto Louis loader, remove aileron lock dolly from wing

Roll wing out until middle of spoiler is centered on Louis Loader

Strap wing into Louis loader; adjust height, lift loader legs

Roll wing and spar dolly rearwards till almost out of trailer Caution: don't pull spar off dolly!

OPTIONAL: Slide Louis loader post away from fuselage, but center the post before rotating wing to avoid tipping over. At spar end, maneuver wing to mate with fuselage

Align wing tip fore/aft; adjust height (wingtip about chest high);

Unlock spoiler, carefully insert wing into fuselage

Secure 2 knurled locking rings (may need to wiggle wing fore/aft to get locking rings to snap in position)

Position wing stand securely under right wing, check it.

OPTIONAL: Remove Louis loader and move it to left side of fuselage

Secure spring-loaded pin on wing dolly into track hole

LEFT WING: repeat process for left wing with 5 additional cautions:

- 1) Check that tripod support on right wing is secure
- 2) Make sure all pushrods in fuselage are clear of path for left spar
- 3) be careful not to scrape wing on spar pin from right wing projecting thru left side of fuselage.
- 4) when inserting left wing, insert partway and adjust height of wing so that left wing spar pin aligns with right wing receiver hole as seen from cockpit. If you try to insert misaligned left wing it will damage fuselage skin near insertion point.
- 5) Secure all 4 knurled locking rings for wings

Stabilizer Connection

BRING STABILIZER from front of trailer (use caution/help if windy)

Position stabilizer spherical bolt on platform receptacle on top of fin

At rear of stabilizer, lift elevator, attach Hotellier clip and safety pin, lower elevator

At front of stabilizer, push knob downward, rock stab left/right and push rearward to lock on pintles

Spherical bolt connection will snap into place. Wiggle stab to check; check rudder pushrod nuts

Install total energy tube in lower tube on vertical fin

Wing Controls Hookup

Remove from cockpit; 1) hatch cover; 2) total energy tube; 3) ziplock bag with tape, scissors; place all on left wing

HOOK UP 4 PUSH RODS IN HATCH OPENING with Hotellier clips and safety pins. Safety pins are tied to 3 pushrods, however the safety pin for left spoiler rod is not tethered as are the other connections, it's on the hatch cover eyelet. Loop string around finger to avoid dropping safety pin in fuselage. (the wing assembly process tended to rip off this safety pin if tied to the pushrod, requiring a search for the pin down in the fuselage.)

CHECK HOTELLIER CLIPS AND SAFETY PINS ON ALL 4 CONTROLS; WIGGLE CONTROL CONNECTIONS TO ENSURE POSITIVE LOCK

CHECK THAT ALL 4 KNURLED SPAR LOCKING RINGS ARE LOCKED

Have someone verify control connections

Attach hatch cover with shock cord

Landing Gear and Taping

CHECK GEAR WARNING by opening spoilers with warning switch on (in up position)

Check that landing gear doors are clear of cradle

LOWER LANDING GEAR (may need to lift tail for adequate ground clearance for gear to lock down)

Tape horizontal stabilizer, cover holes on underside

Tape top of left wing, and hatch cover

Use blanket on ground, check main tire (36 psi)

Caution: if using valve extension to inflate tire, be sure to remove it; otherwise it will not clear wheel housing when wheel rotates causing damage to tube requiring replacement.

Tape bottom of wing, tape right wing

Verify gear is down, Push back glider about two feet from cradle, install tail dolly

DISASSEMBLY and STORAGE in TRAILER

Preparation

Make sure rear trailer door is SECURE WITH ROPE to fender!, place ramp stop in ramp track
Align fuselage with carrier,
May need to use red leveling wedge under main gear
Push fuselage onto cradle as far as it will easily go, after wings are off push fuselage to align front edge of cradle between "A" and "S" in "Astir" on the fuselage
Gear warning switch off, radio off, M-Nav off
Remove battery, other equipment
Remove total energy tube and place in cockpit
Raise landing gear

Stabilizer and Controls

REMOVE STABILIZER and disconnect control rod, carefully place in rack on side of trailer, secure with pin
Put plastic tube covers on pitot and T.E. openings
Remove hatch cover disconnect ailerons, spoilers, fasten last safety pin to hatch cover.

Wings

LEFT WING IS REMOVED FIRST

Place tripod under right wing.

Check that left spar dolly is in track and spring-loaded pin is in track hole to lock dolly

Place wingstand securely under right wing,

OPTIONAL: Put wing loader on left wing, check post height and valve to prevent slow sliding down on post

Unlock only left wing locking rings.

Remove left wing, lock spoilers with pushrod.

Maneuver wing along fuselage, do not to scrape wing on spar pin projecting thru fuselage

Place wing spar onto spar dolly, place end of spar in center of dolly, front to rear Caution: this is critical to avoid tilting wheels out of track and dropping wing on metal track damaging wing

Attach aileron lock to wing, overlapping aileron and wing gap

Attach red safety strap to wingtip,

Release spring-loaded pin to unlock spar dolly in track (if dolly is forced to roll with pin locked it will force dolly out of track causing wing to tip over)

Slowly roll wing into trailer Caution: be sure not to scrape wing right on spar pin sticking out of fuselage, trailer sidewall or rear bottom lip or top of trailer

Secure spring-loaded dolly pins to hold spar dolly in track at front of trailer

Slide wing spar all the way on spar dolly,

Tape or wire spring-loaded pins if trailering

REPEAT PROCEDURE FOR RIGHT WING

Fuselage

Check that fuselage cradle is in track, ramp angle, remove stop block ramp from ramp track,

Lift and roll fuselage into trailer with tail strap, fasten fuselage with tiedown strap

Tail dolly will drop off.

Caution: lift only high enough to clear wheel detent, don't hit top of fin on trailer;

Pick up tail dolly and stow it.

Stabilizer Storage

Place stabilizer rack with bottom of stabilizer toward right wall of trailer

Check for correct track on floor, slide into position, install locking bolt and safety pin

Secure equipment, trailer, LOCK rear door