

# BFSS Towpilot Procedures

Revised 08/05

## Introduction

Welcome to the Black Forest Soaring Society (BFSS). We are soaring enthusiasts and fly all year round. To do this, we need a trusted friend with a tow hitch, also known as a tow pilot.

The purpose of this document is to provide tow pilots at Kelly Airpark (KAP) with the information necessary to conduct safe and efficient operations. By using the information herein, a tow pilot will be able to operate in the sometimes busy and often hectic KAP environment. This document ensures that all tow pilots will be standardized.

All BFSS tow pilots are required to read this document before towing at KAP. In case of significant changes to the document, or when deemed necessary by the Chief Tow Pilot, a meeting will be held to standardize BFSS tow pilots.

The most important aspect of flying at KAP is **SAFETY**. Do not, under any circumstances, compromise safety in the interest of efficiency. Our Piper Pawnee is the single point of failure to our operation, and we cannot afford to lose our trusted and valued tow plane. We have a safe operation here and we want flying at KAP to be rewarding and safe for all participants.

As with any safety-related document, it may become necessary to revise procedures. Any suggestions for change to this document are welcomed and encouraged. They should be taken up with the Chief Tow Pilot, or a member of the BFSS Board of Directors (BOD).

Keep in mind that KAP is a residential airpark and as such there will be times when there will be a mix of gliders and powered traffic, with and without radio transmissions. BFSS does not own the airpark; we are, however, owners of a lot and as such are *residents* here. Courteous communication is the best tool to create a cooperative and friendly environment.

We need to be familiar with and obey the Kelly Airpark Rules of Operation. The rules may change from time to time. You'll find the most current version at the front desk of the BFSS Operations building. And, of course on the **BFSS** website.

Last not least, all tow pilots must be familiar and in compliance with respective FARs. These are [61.69](#) (Glider Towing: experience and training requirements) and [91.309](#) (Towing gliders, as well as the specific FARs addressing airspace, and VFR operations). As tow pilots we need to be aware of glider operation procedures and ensure that we meet the annual requirements to stay tow-current.

The [Soaring Safety Foundation](#) has an excellent online [tow pilot course](#). Please take the time to view this brief course.

## General

- Tow pilot availability:

As BFSS tow pilots we all agreed to the commitment to tow gliders on weekends. The Chief Tow Pilot, or designated representative ensures that there is at least one tow pilot on each day of the weekend. To facilitate the process, tow pilots sign up on the BFSS Club calendar ([www.soarBFSS.org](http://www.soarBFSS.org)).

The online [calendar help](#) will also reveal at what time you should be at KAP and ready to tow (consult the individual club ship sign-up links, or talk to the CFGs). Being ready on time is important to avoid delays in operation.

- Tow pilot currency:

The FAR regulates the minimum requirement for tow currency. BFSS BOD encourages tow pilots to fly more than the bare minimum in order to contribute to a safe and efficient operation at KAP. Therefore, BFSS tow pilots may fly up to 15 minutes per month (about 3 touch and goes) to stay current and confident in the Piper Pawnee, if he couldn't exercise the privilege of towing in the previous month.

More flying time needs to be granted by the BFSS BOD. In case a tow pilot has not flown a Piper Pawnee, or similar tail-dragger for a certain time, recurrency flights will be performed before towing at BFSS. If not flown Pawnee or similar taildragger...

- In last 90 days: three (3) touch and goes (T&G's)
- In last 180 days: 30 minute refamiliarization flight including five (5) T&Gs.
- For more than 180 days: Recurrency program with Chief Tow Pilot

It's your responsibility to meet BFSS and FAR currency requirements!

## Tow Documentation

To facilitate and track BFSS towing operations, BFSS created forms that need to be filled in and filed. It's not as painful as it sounds.

- Tow Log Sheet:

It is designed to help keep records of tows (number of tows, fuel and oil used, tachometer reading (start and end). One sheet per day should be sufficient, and needs to be filed at the front desk. Blank copies are located at the front desk.

- Tow Pilot Activity Sheet:

Each tow pilot will fill in this sheet to facilitate the tracking of his or her activity and currency.

- Squawk Sheet:

Discrepancies will be recorded on this sheet to notify next tow pilot of problem. It is located in the BFSS ops building.

- **Note:** All forms are available online in the [MEMBERS ONLY](#) area.

## Tow Operations

### 1. General

- Tow Log Sheet:

Pick up a blank form at the front desk. Start a new log for each flying day.

- Pawnee general considerations:
  - Parking brake: Avoid using the Pawnee parking brake because of possible brake fluid leakage.
  - Outside parking: Make sure the aircraft is not hindering normal operation. Therefore, do not leave it unattended on the KAP common areas (taxiway etc.). If unattended, chock the aircraft wheels in light winds, and if the wind exceeds 10 knots, tie down the aircraft in designated area in front of the hangars.
  - Preflight: Always refer to the POH. Towing puts excess strain on the aircraft, therefore particular attention should be paid to oil consumption and leaks, strut fittings, landing gear, wheel brakes, and the release mechanism.
- Inside the Hangar
  - Before moving the Pawnee, make sure the prop is horizontal. This will prevent damaging the prop on the hangar door!
  - Cold weather ops: When the Pawnee is in use, stow preheater and blanket neatly in hangar.
  - After flying operation, install preheater and put blanket in place.
- Outside hangar
  - Towrope: The tow rope should be attached before start-up. Be sure it is thoroughly inspected, and completely unrolled to prevent knots. The stronger (thicker) weak-link with the Schweizer ring goes to the tow plane hitch. If you have any doubt whether the rope

is still good, replace it!!! You'll find extra weak-links in the tow plane (behind the seat on the frame).

- Before starting engine, ensure:
  - Prop blast will not blow into open hangars.
  - Prop blast will not blow on gliders or people
- Startup
  - Follow steps in checklist
  - Avoid high power-settings in order to minimize prop damage due to loose gravel
- Runup
  - If feasible, perform runup on prepared surfaces (paved or gravel).
  - Refrain from taxiing across the grass (infield);
  - **EXCEPTION:** in case of emergency do whatever is sensible, and the grass area on BFSS lot may be taxied on.
- Refuelling (note: BFSS uses AvGas ONLY!)
  - The Pawnee needs to be refueled after 10 tows, or the fuel gauge shows 10 gallons remaining.
  - The fuel pump is located on south of Hangar 2.
  - Taxi slowly and carefully to the pump. If in doubt whether you are too close to an obstacle/pump, shut down and push the aircraft by hand.
  - Make sure Magnetos and Master Switch are in the OFF position.
  - The fuel tank shut-off valve needs to be opened and can stay open until the daily flying operation is complete.
  - When ready to pump fuel, switch on the electrical pump. The switch is located on the outside south wall of Hangar 2. The key to unlock the lever is in the BFSS Ops building.
  - Oil is located in Hangar 2 or in the Furnace Room of the Ops building.
- The tow
  1. Standard Signals
    - Standard signals for ground and in the air signaling are in attachment 1.
    - If in doubt, use the radio to clarify situation. All club aircraft are radio equipped.
  2. Runway line up
    - BFSS aims for a maximum of two (2) minutes from lineup to takeoff, **BUT** everyone must follow proper procedure, be vigilant and do not compromise safety.
    - Before taking the active runway
      - Ensure no aircraft is in the traffic pattern ready to land.
      - Make a radio call:

*Kelly AP, Pawnee 76S, staging glider for takeoff on Runway 17/35, Kelly!*

- Avoid high power settings in close proximity to any glider/personnel
- Taxi forward about 100 ft and follow the line-crew signals.
- Take up the remaining slack out of the rope when:
  - the glider's canopy is closed
  - the glider's wings are level
  - the wing-runner signals to take out slack
  - if in doubt, use the radio to clarify
  - EXCEPTION: no line crew available:
    - In case of no line-crew, coordination is critical. Therefore, no tow will be accomplished without radio contact between the glider and the tow plane.
    - Glider pilot will provide clear commands to the tow pilot. Under no circumstances will the tow pilot take out slack when either the glider's canopy is still open, or the radio call is not clearly understood.
  - If the active runway needs to be cleared (emergency, etc.), make sure the tow rope is not attached to the glider before exiting the runway.

### 3. Takeoff

- Take out slack slowly to avoid a jerk which could cause the glider to over-run the rope.
- When ready to go, the glider will wag the rudder and wing runner will make a circular motion with his arm (in case of no line crew, the glider pilot will wag the rudder and make radio call: ***glider XXX, go-go-go***). The tow pilot acknowledges by wagging the rudder in return.
- Make sure that the traffic pattern and the takeoff area is clear. Remember that not all aircraft are radio equipped, i.e., you always need to vigorously clear in all directions.
- Exercise extreme caution when aircraft are in one of the intersections in front of you.

Crosswinds might bring you and/or the glider too close to that aircraft. Safety is paramount, don't jeopardize it!

- Make radio call:

***Kelly AP, Pawnee 76S, taking off runway 17/35, glider in tow, Kelly.***

- Begin takeoff roll applying power smoothly trying to get the tail wheel off the ground ASAP. Apply crosswind inputs, and be aware of unwanted inputs from the glider. At 60 MPH fly the tow plane off the ground and stay in ground effect until towing speed has been obtained. Thermals, turbulence etc. will cause airspeed fluctuations. Do not chase the airspeed. Hold a pitch picture that will generally provide the desired airspeed.
  - At BFSS we use the following tow speeds:
    - All Schweizers: 70 MPH
    - Blaniks: 70-73 MPH
    - Glass ships: 75-80 MPH (70 knots)
  - Glider pilot should notify you when (s)he wants a different tow speed!
  - Ensure that you know whether the request is in MPH or KNOTS, and make the necessary conversion.
  - Fly runway heading until you've climbed to at least 200 AGL before turning crosswind.
4. Standard Tow Track (for graphical depiction see attachment 2)
- After you have reached 200 ft. AGL on extended runway heading, make a turn to the east. Do Not Turn over the houses. Clear well for powered traffic in the east pattern.

**EXCEPTION:** In a strong west wind situation (winds greater than 15 knots), the first turn will be to the WEST, to provide the glider with a safer position in case of an Emergency (rope break, etc.). In that case, the complete pattern will be to the west of the airfield!!!

- The standard downwind leg should be between the runway and creek to the east (rocks). From this position the glider has a good chance of making it safely to the airfield in case of an emergency (rope break, etc.). Make a radio call on downwind to alert other traffic in the area.
  - The standard towing pattern is rectangular around the airfield. If glider is still on tow when approaching the NW corner of the field, continue with turns to the south and north that will bring the glider to a release point west of KAP and upwind. Consider winds (upwind preferably), sink, cloud etc. to determine where to tow the glider.
  - If thermalling is intended, make all turns to the right, if possible. That way the glider can release in the SSA approved standard manner while staying in the thermal.
5. Tow Release

- Typically the glider initiates the release. That means that the tow pilot has to have good situational awareness at all times to avoid conflict with other traffic.
  - After release, note the release altitude for later recording, reduce power to 2400 RPM, and make a shallow 90 degree descending turn to the left while vigorously clearing the area. Maintain an airspeed **high in the green arc** while staying below redline in descent.
6. Entering the Pattern at KAP
- The KAP rule is that powered traffic will enter the pattern for runway 17/35 from the east, glider traffic enters the pattern from the west. In case of use of runway 26 (shorter grass runway; only for landing!) powered traffic will enter from the south and gliders from the north. These rules result in merging patterns from base to final leg for all runways at KAP. Avoid flying over any houses near KAP.
  - To get to the east side of KAP, tow pilots typically cross the runway at midfield at 1500 ft AGL (radio call), fly far enough east to enter the downwind leg from the east, and clear for potential conflicts. Clear the pattern, descend to 1000 ft. AGL entering downwind, make a radio call and complete checks.
  - For Rwy 17, base leg should be outside (north) of power lines. Land on the main runway. If the main runway is blocked, land on Rwy 26, winds permitting.
  - The east taxiway should be used as a last resort per KAP rules. Be aware of the wind sock on short final at northeast corner, houses, and pedestrians/golf cart/other aircraft on/near the taxiway. If in doubt, go around!!!
  - For Rwy 35, base leg should be between Steele Rd. and farm to the south of KAP. Watch out for cars on Steele Rd. and sight-seers. Fly your final approach high enough to avoid cars and people, as well as the fence next to the road. Mandatory **300 ft.** agl on crossing Steele road. *Always remember that you have a tow rope attached!!!*
  - For Rwy 26, base leg is between runway approach end and the "rocks". Be aware of cars driving on Ben Kelly Road (short of runway). Give right-of-way to gliders because there is no alternative runway for 26, although the landing area is fairly wide. The landing strip is made of grass and is up sloping, i.e. don't be slow! Stop your landing roll before crossing the eastern taxiway. Strong west winds can create wicked wind phenomena. If in doubt, go around!
  - Rwy 08 cannot be used for our purposes. Only in an extreme emergency that portion should be used. It is hardly maintained and has not been flight tested for use.

## 7. Go Around

Occasionally, it may be necessary to execute a go-around in the tow plane to avoid interfering with other aircraft operations, or obstacles/people on the ground.

- Do not drop the rope, turn away from potential conflict, while executing a go-around.
- Avoid flying over buildings and other aircraft.
- Reenter pattern for subsequent landing.

## 8. Landing

- Aim for touchdown about 500 ft down the runway (rope consideration).
- Typically, we land with tow rope attached, but...
- On Rwy 17/35, and gliders waiting for tow, experienced tow pilots may consider dropping rope overhead runway approach end (preserves rope).
- Rope Drop Procedures
  - When 2 or more Gliders are staged for takeoff, it is recommended to drop the towrope.
  - **Do** drop the rope just short of the runway on the grass.
  - **Do not** drop the rope if no ground handlers are present.
  - **Do not** drop the rope if your safety and the towplane are in jeopardy.

## 9. After Landing

- Complete *After Landing* checks (especially: flaps-up, lights-off).
- Clear the active runway ASAP if other traffic ready to land, ready for take-off, or no gliders ready for take-off.
- Traffic permitting, consider back taxiing on active runway, if glider ready to launch (preserves prop and expedites operation). Be aware of tow-rope when making a 180 degree turn because there is potential to roll over the rope while the rope is under tension which might lead to a rope break!
- Under all circumstances, state your intentions on the radio!
- Complete the entries on *tow log* sheet (previous release altitude, next glider details, etc.).

## 10. Parking Pawnee between tows

- For short parking periods (less than 30 minutes):
  - Park on the eastern side of the paved intersections at the end of runway 17/35.
  - Stay with the Pawnee at all times to move the aircraft, if necessary.

- For longer parking periods (more than 30 minutes):
  - Consider refuelling the Pawnee (will expedite following operations!).
  - Park in front of BFSS front hangars (see details on pg.4, outside parking).

#### 11. End of Day

- Refuel Pawnee
- Fuel tank shut off valve needs to be closed after flying operations complete.
- Fuel pump electrical switch needs to be locked.
- Fuel pump key needs to be put on key rack in BFSS Ops Building.
- Prop must be HORIZONTAL position (potential for prop damage on hangar door!)
- Push Pawnee into hangar 2 and chock the wheels.
- Complete Post-Flight Inspection & walk around.
- Tow rope: make sure it is in the hangar, and neatly laid out in front of the tow plane.
- Cold wx ops: blanket and pre-heater in place.
- Ensure hangar doors (including side doors) are locked.
- Complete *Tow Log* (especially tachometer reading) and *Tow Pilot Activity* sheet, and file properly.
- Squawks: write down all discrepancies on *Squawk* sheet in BFSS ops building.
- For minor discrepancies: no further action is required.
- For major discrepancies: notify Pawnee Aircraft manager, or BFSS BOD! Doug Curry is our A&P, and should be notified of major discrepancies.

#### 2. Repairs and Maintenance

- Do NOT try to fix the aircraft mechanically, unless you are A&P certified.
- Doug Curry is our A&P, and he is familiar with the Pawnee maintenance history. He performs oil changes, and checks for typical wear and tear.
- You should clean the aircraft (oil spots, windows, interior), and make sure that **all** discrepancies have been written down and appropriate personnel notified.

#### 3. Pawnee Technical Data

- Fuel used: 100LL avgas
- Fuel tank capacity: 36 gallons (usable)
- Fuel consumption: 10-12 gal/hr
- Oil capacity: 12 quarts (9-10 qts. Desired to prevent overflow).

## Recommendations

We all should strive for a more efficient and safer way of operation. Therefore, forward all recommendations to the Chief Tow Pilot or BFSS BOD.

THANKS FOR BEING A BFSS TOW PILOT AND MANY HAPPY LANDINGS!