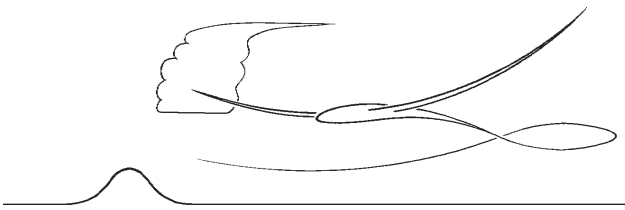

Alberta Soaring Council

2008
towing operating guide

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All specific data in this guide are given for the ASC towplane C-GPCK Bellanca Scout 8GCBC.

This towing operating manual has its roots in the first guidelines of 1985, drafted by the first ASC Chief Towpilot Tom Schollie of the Edmonton Soaring Club.

It went through various changes since 1985 until Iain Colquhoun of the Cu Nim Gliding Club issued this comprehensive towing operating manual in 1989.The manual is designed to help the new and the seasoned towpilot to understand the standard towing operation in the Alberta clubs.

In 1993, C-GPCK underwent an engine overhaul where three of the four cylinders were cracked. To avoid this costly expense, we are trying to adopt a standard let-down procedure which will avoid shock cooling of the engine's cylinders • see Schedule B and C. Although there are many different feelings and ideas about this procedure, until a better (and proven) procedure is developed I feel this method is presently the best on which to base the Scout's let-down procedure.

Michael Crowe • March 1994

ASC Chief Towpilots

1984-1985	Tom Schollie *ESC*
1986	Iain Colquhoun *Cu Nim*
1987	Doug Heyhurst *ESC*
1988	Gary Uhl *Cu Nim*
1989-1990	Iain Colquhoun *Cu Nim*
1991-1993	John Broomhall *ESC*
1994-1997	Michael Crowe *Cu Nim*
1998	Tom Schollie *ESC*
1999	Andrew Jackson *ESC*
2000-2002	Liam O'Connell *CASC*
2003	Todd Lemieux *CASC*
2004	Liam O'Connell *CASC*
2005	Todd Lemieux *CASC*
2006	Rob Riege CASC
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Every ASC towpilot is invited to offer changes, corrections, etc. to this guide.
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Introduction

This guide covers the recommended practices of the *Alberta Soaring Council* (ASC) regarding towplane care and towing operations at ASC events. It is intended to encourage safety and uniformity of operations.

Nothing in this guide relieves the towpilot from the responsibility to comply with all applicable Air Regulations, Air Navigation Orders, NOTAMS, nor the need to practise good airmanship including the execution of any action or procedure that the towpilot judges necessary to avoid an unsafe condition. *Non-soaring related flights invalidate our insurance • see 2.2.13, 2.6.3 and 2.6.11.*

The ASC Chief Towpilot shall be responsible for the general condition of the towplane and necessary maintenance to keep it in flying and legal condition. ASC requires that member clubs allow free of charge "flying" storage of the towplane in the winter months. If no club can store it, the executive then has to find rental space.

All further duties, responsibilities and towplane priorities are specified in the ASC Action Plans. They are updated annually and distributed to your club's president by the Executive Director before the flying season begins.

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2 Operating rules

2.1 Before starting tow

see also 3.1 Before starting tow

2.1.1 A thorough inspection of the towplane shall be carried out before each day's flying (see Schedule K). Special attention shall be given to cold weather and winter operation (see 2.6.14).

2.1.2 The towplane shall be washed before each day's flying. The windshield shall be cleaned and the tailwheel checked and greased as appropriate.

2.1.3 A complete run-up shall be made.

2.1.4 A check flight is recommended before the first tow of the day. This flight should consist of one circuit to a maximum altitude of 1000 feet agl. Except in exceptional circumstances, no other test flight shall be made.

2.1.5 Enter starting tach time in the field/snag book, kept in the towplane.

2.1.6 Unless conditions warrant otherwise, fuel tanks shall be full to reduce downtime.

2.1.7 The oil shall be changed at not more than 25 hours intervals.

2.1.8 Whenever starting or running the engine, an authorized power pilot shall occupy the pilot's seat.

2.1.9 Check the tow release mechanism before the first tow.

2.1.10 Read the tow ticket carefully. Note any instructions and special conditions (eg. water ballast, airspeed, time off tow request, geographical locations, etc). Sign the tow ticket and enter the towplane registration. At least one tow ticket must be received for each tow.

2.1.11 Before taxiing or taking off, ensure that the maneuvering area or runway is clear and broadcast your in-tentions on the mandatory frequency or the aerodrome traffic frequency.

2.1.12 When taxiing or backtracking a tailwheel aircraft in winds equal to or greater than 10 mph, proper use shall be made of the elevator and ailerons:

predominantly head wind —
stick back and into wind

predominantly tailwind —
stick forward and out of wind

2.2 Takeoff and during tow

see also 3.2. Takeoff and during tow

2.2.1 Commence takeoff only when the signaller is in position and proper signals have been given (see Schedule F p19).

2.2.2 On receiving the "all out" signal, ensure that the rope is tight then smoothly apply full power. Use the short field procedures appropriate for the towplane type. Normally this will be a tail-low takeoff with about 15 degrees of flap.

2.2.3 Check the rpm, oil pressure, and manifold pressure. Do not attempt to take off if full power is not being achieved.

2.2.4 If there is any doubt as to the adequacy of the length of the runway, a marker shall be set to assist in monitoring the takeoff. One of the two methods outlined in Schedule D may be used to monitor the takeoff.

2.2.5 Departures shall conform to usual departure

procedures at uncontrolled aerodromes unless special conditions (weather, obstacles, etc) dictate otherwise (see AIP RAC 4.5 and Schedule E).

2.2.6 Maintain tow speeds accurately, particularly in turns.

2.2.7 Unless conditions dictate otherwise, all turns to be not steeper than rate one at the towing speed – that is a standard 2 minute turn.

2.2.8 The towing pattern shall be chosen with due regard to the sailplane type and conditions. Unless directed otherwise by the duty instructor, the towing pattern shall keep the sailplane within gliding distance of the aerodrome at all times.

2.2.9 Unless directed otherwise by the duty instructor, all training sailplanes are to be released upwind of the aerodrome.

2.2.10 Normal release altitude is 2000 feet above ground. If the sailplane has not released by 2100 feet, reduce power and maintain altitude. If after a few minutes the sailplane has still not released, the towpilot may give the release signal (see Schedule G). This signal is an emergency signal and should not be used lightly.

2.2.11 If a descent is necessary on tow, do not descend rapidly. Attempt to communicate with the sailplane pilot before descending (more in Schedule H).

2.2.12 With due regard for the classification of the airspace and the traffic density, conservatively remain VFR at all times.

2.2.13 To reduce tow times, seek out areas of lift and do not tow into areas of known sink. After release return to the field immediately. *Sightseeing is prohibited (see also 2.6.3 and 2.6.11).*

2.2.14 Keep a good lookout for other air traffic. Vigorously apply the VFR principle of "see and be seen" ("see and avoid").

2.3 Descending

see 3.3 Descending

2.4 Approach and landing

see also 3.4 Approach & landing

2.4.1 Usual procedures for joining the circuit at an uncontrolled aerodrome shall be used (see AIP RAC 4.5 and Schedule E). Traffic arriving from the upwind side of the aerodrome shall join via the upwind point. Traffic arriving from the downwind side shall join via the downwind point.

2.4.2 Unless agreed otherwise with the duty instructor, all circuits shall be left hand. (Note that this is also true for sailplanes. However sailplanes may be forced into a position where they must execute a right hand circuit.)

2.4.3 Always be conscious of the tow rope. Never overfly people, sailplanes, cars, etc. with the rope attached. Plan approaches so that there is no chance of snagging the rope on any obstacle.

2.4.4 Release the rope over the beginning of the active runway so that it may be attached to the next sailplane as the towplane lands and backtracks.

2.4.5 When ground winds are strong, use the first third of the runway for landing if possible and start the tow from that position. Do not taxi downwind without assistance unless absolutely necessary.

2.5 Backtracking

2.5.1 On rollout, taxi to the right hand side of the runway. In a crosswind, taxi to the downwind side of the runway so that the *crosswind* turn can be made into the wind.

2.5.2 Make sure that the runway and the circuit are clear before backtracking. Announce your intentions to the aerodrome traffic.

2.5.3 If the towplane has taxied with the rope attached, release the rope so that it must be re-attached. This procedure will prevent possible premature release of the rope during flight.

2.5.4 When taxiing near sailplanes, take care that the propwash does not upset the sailplanes.

2.5.5 Insofar as possible, plan ground maneuvering so as not to blow dust into the hangar or towards people or sailplanes.

2.5.6 High speed taxiing is prohibited.

2.6 Miscellaneous

2.6.1 **Emergency signals** on tow as per Schedule G.

2.6.2 **Minimum broadcast** As a minimum, the towpilot shall broadcast his intentions at the following locations:

- before taxiing
- before taking off
- returning for landing
- downwind

- on final
- before backtracking

The calls shall be made on the mandatory frequency or the aerodrome traffic frequency and should be as concise as possible using standard radio phraseology (see 3.6 Radio procedures).

2.6.3 **Towplane occupancy** Only the towpilot shall occupy the towplane while flying and/or towing a sailplane. Exceptions are pilot check-out and conversion training. "ASC-approved passenger flights" (eg. PR aerial photography) require specific authorization of the ASC event coordinator (see also 2.6.11 and 2.2.13).

2.6.4 **Towplane ferry flights** On ferry flights (including cross-country aerotows) and other cross-country flights conducted as a part of the towing operation, the towpilot is encouraged to carry a *responsible* person as a passenger primarily to assist in the ground handling of the aeroplane. In this case, the towpilot shall occupy the seat normally occupied for solo operation.

2.6.4 **Field book entry** Each pilot shall enter the following information into the field book kept in the towplane:

- Date
- Pilot's name
- Tach time in and out (for each shift)
- Fuel and oil added
- Description of activity, each with a separate entry (eg. number of tows, ferry flight with departure A/D and arrival A/D, checkout flights, etc)
- Any snags

The last pilot to fly the towplane in the day shall ensure that the journey log is current per CAR 605.92.

2.6.5 **Parking** Park the towplane into the wind. The parking brake is not recommended unless the wind is high enough to move the aeroplane. If the towplane is to be left unattended (eg. overnight), tie down the tail and both wing struts and secure the stick with the harness.

2.6.6 **Environmental limitations**
Account shall be taken of the environmental limitations given in Schedule A. *If in any doubt about the aeroplane or conditions, shut down the operation.* The towpilot is responsible for the safety of the towplane.

2.6.7 **Non-aerodrome retrieves** Tows from non-aerodrome sites such as for sailplane retrieves are strongly discouraged. Such flights shall only be made with the joint consent of the safety officer (or his designate), the duty instructor, and the chief towpilot.

2.6.8 **Special conditions and requirements** The towpilot shall take account of and comply with special conditions and requirements of the aerodrome of operation (see Schedule J).

2.6.9 **Fatigue** Towing in the vicinity of a busy airfield is a particularly hazardous operation. The towpilot shall take positive measures to guard against fatigue. It is highly recommended that every 8 to10 flights the towpilot take a short break and stretches/exercises.

2.6.10 **Damage** Any damage to the towplane, either actual or possible (ex. from a hard landing), shall be reported to the ASC Chief Towpilot without delay.

2.6.11 **Joy rides** All flights shall be conducted in such a manner as to minimize flight time. Sightseeing and joyriding are strictly prohibited. Flights for hire or reward and any passenger flights invalidate our insurance (see also 2.6.3 and 2.2.13).

2.6.12 **Towpilot requirements** The ASC minimum requirements for towpilots are as follows:

a) must have proven ability to fly a tail-wheel aeroplane and must have 10 hours on a similar type.

b) must pay the appropriate club dues. SAC membership is mandatory to comply with the group insurance policy.

c) a checkflight and a dual tow must be made with the club chief towpilot or his designate prior to solo tows.

d) if a new towpilot has not towed sailplanes previously, a sailplane flight will be given. The new towpilot shall make 5 dual tows with the club chief towpilot or his designate prior to solo tows.

e) must have 100 hours pilot-in-command experience.

f) must have current medical and licence.

2.6.13 **Hand propping** Hand propping is not encouraged. If done, it is done entirely at the towpilot's discretion and risk. It shall only be attempted by someone with suitable experience and with an authorized power pilot occupying the pilot's seat. It is preferable that the engine be jump-started from an automobile battery. The towplane's tail should be tied down to prevent inadvertent taxiing during propping.

2.6.14 **Cold weather/winter operation** Before using the ASC Scout towplane in the winter, these conditions are mandatory:

If the Scout is intended on being used regulary during the winter, the oil shall be appropriate winter weight.
- The runway shall be cleared of snow to a minimum width of two wingspans.
- The snow piles at the edge of the runway should be

flattened as much as possible to avoid the possibility of prop strikes.

- The Scout shall be pre-heated prior to use when tem perature is lower than +5° Celsius. A blanket should be placed over the engine, and heat applied (interior car heater is adequate) until the prop turns freely by hand (ensure mags are off), and the oil on the dipstick appears thin and runny. Allow at least one hour for this.

- The aeroplane shall not be left unattended while pre-heating, and a fire extinguisher shall be nearby.

3 Recommended practices

This section lists practises that have been found to enhance the safety and smoothness of the towing operation, and to reduce wear and deterioration of the equipment. It is included as a guide and reference source for towpilots. In general, requirements listed in the rules have not been repeated here unless some amplification has been judged desirable.

The information given below relates to a single engine, fixed gear, tailwheel aeroplane (specifically the Bellanca Scout, 8GCBC, 180 hp). Adjustments should be made for specific towplane types and configurations.

3.1 Before starting tow
see also 2.1 Before starting tow

3.1.1 A thorough daily inspection (DI) will have been made at the beginning of the day's towing operation. The daily inspection forms in the towplane shall be filled out as per Schedule I.

Before starting his shift, the towpilot should conduct a walk-around and pre-shift inspection. As a minimum, the following items should be checked:

- Flight controls
- Fuel on and sufficient
- Pitot and static tubes
- Tires (18 psi front, 40 psi rear)
- Brakes (condition and pressure)
- Landing gear U-bolts (cracks)
- Fuel caps secure
- Oil level (5.5 to 7.0 quarts)
  W80/W100; winter 80 or 65 weight
- Prop condition
  (check *switches off* first)
- Tailwheel assembly and springs
- Tow hook

3.1.2 When ground handling the towplane, push only on the struts at the ends (adjacent to the fuselage and wing attachments). Do not push on the rear lift strut. Use the handle at the empennage to turn the aeroplane. Do not push on the fuselage bulkheads.

3.1.3 When refuelling or checking the gas caps, do not stand on the struts.

3.1.4 Try to arrange to refuel during a lull in the flying activity. Do not taxi right up to the chocks; stop short and pull the aeroplane forward by hand. Attach ground wire to the exhaust stack. Check fire extinguisher is at hand.

Spill a small quantity of fuel before filling tank to check colour – the Scout uses 100 – (octane green = 100; octane pink = 80) and to check that nothing is obstructing the nozzle. Do not wedge the nozzle into the aeroplane's tank. Support the weight of the hose by hand. Check caps are tight.

On cross-country flights, remember to allow the required reserve.

In high wind and/or on rough ground, get help to push the aeroplane back from the pump. Not to do so can result in personal injury and damage to the towplane.
Be especially careful when taxiing back onto the runway. Make the appropriate radio call. A complete 360 degree turn to check the circuit and final approach is recommended.

3.1.5 Engine start and run-up

- Prime as required (0 to 6 shots
  depending on temperature)
- Primer closed and LOCKED
- Switches on
- Brakes on
- Prop clear
  (yell ALL CLEAR out of the window)

- Start (not above 800 rpm until oil pressure registers
  on gauge; if no oil pressure in 30 seconds, shut down).

A run-up will normally only be necessary before the first flight of the day. It should be made into the wind, and away from hangar and flightline. As a minimum the following items should be checked:

- RPM to 2000

- Lean for maximum power, then
  back off 5 turns
  200 rpm maximum mag drop
  50 rpm differential

- Carb heat – Remember to return to COLD. Do not taxi with heat on; unless carborator icing is suspected, do not land with carb heat on.

- Check engine gauges
- Check full idle with carb heat cold
- Idle at 1000 rpm

For usual operation in Alberta, the above leaning procedure will result in a setting that need not be adjusted during the towing operation. In conditions of high density altitude, it may be advantageous to lean further for maximum power when towing higher than 2000 feet agl.

3.1.6 Make pre-taxi and takeoff checks such as the following:
- Mixture
- Oil pressure
- DG
- Trim
- Carb heat cold
- Straps, flaps and hatches
- Brakes (tow brakes functional, parking brake FULLY OFF)
- Wind
- Gas

Check runway/maneuvering area clear.

3.1.7 Before your shift, check the condition of the tow ropes currently in use. All tow ropes should have a proper weak link at the glider end with a maximum capacity of 1200 pounds. The minimum rope length should be 130 feet (40 metres). Ropes in poor condition or too short should have the rings removed.

3.2 Takeoff and during tow
see also 2.2 Takeoff and during tow

3.2.1 Make sure you can clearly see the signaller or the repeat signaller.

3.2.2 On receiving "all out", advance the throttle smoothly in one motion to full throttle, having first ascertained that the rope is tight (see Schedule F).

3.2.3 Check that the runway is clear before taking off. Broadcast your intentions to the aerodrome traffic and listen for responses. Do not take off if there is traffic on base.

3.2.4 A tail-low takeoff is recommended (allow the sailplane to lift the towplane's tail). This minimizes load on the main gear and results in a shorter ground run. The following procedure is recommended:

- Two notches of flap (15 degrees)
- Hold stick in neutral (allow sailplane to lift towplane's tail)
- Lift off at 50 mph
- Lower nose slightly and accelerate to climb speed

Be absolutely sure of the location of the release handle on takeoff. If full backward stick is required, release the sailplane *immediately*.

3.2.5 On initial takeoff run, check
- Revs (not less than 2400 rpm)
- Oil pressure in the green

3.2.6 Do not begin climb out until accelerated to climbing speed. (A minimum of 60 mph in the Scout).

3.2.7 Maintain tow speeds accurately to within plus/minus 5 mph. In turbulent conditions, fly attitude. In the Scout, when using the alternate static source, deduct about 8 mph from the ASI reading.

3.2.8 Immediately after liftoff, maintain a uniform angle of climb. This might require allowing the airspeed to exceed normal towing speed by 5–10 knots for about the first 30 seconds when the headwind component exceeds 10 knots.

3.2.9 Keep a good lookout for other air traffic. Flying conditions around a busy gliderport demand the utmost concentration. It is primarily for this reason that towpilots are warned to guard against fatigue. Sailplanes generally do not have on-board power generating facilities and many do not have a functioning radio at all. Be alert at all times for NORDO aircraft and aircraft on the wrong frequency.

3.2.10 Do not tow continuously into the sun.

3.2.11 Tow with zero, one, or two notches of flap as desired.

3.2.12 If full control movements are required to control the towplane, release the sailplane immediately. Do not allow the sailplane to get so far out of position that a release is impossible. This condition can lead to a "towplane upset" with little hope of recovery.

3.2.13 Approach the release height at 2000 feet agl upwind of the field unless other arrangements have been made with the glider pilot. If a training sailplane requests a downwind release, confirm the request with the duty instructor.

3.2.14 When the release height is approached, fly in a straight line on a heading that will allow the sailplane pilot to locate the field. If the sailplane has not released by about 100 feet above the requested release height, reduce power and maintain altitude. Attempt to make radio contact with the sailplane to determine the problem. If communication cannot be made, tow the sailplane over midfield and wave sailplane off (see Schedule G).

3.3 Descending

3.3.1 Do not descend or turn abruptly until you are sure the sailplane has released. The following methods are useful for verification:

a) Radio communication with sailplane (useful in turbulent air).

b) Look over your shoulder at the rope when doing a forward skid.

3.3.2 On release make a partial *left* turn.

3.3.3 Descend in a series of turns (left turns in the region of an aerodrome where a left hand circuit is in effect) so as to check for other traffic. Clear all airspace visually before entering into it.

3.3.4 Let down procedures are currently under review; refer to Schedule C.

3.4 Approach and landing

see also 2.4 Approach & landing

3.4.1 Plan to make a slightly wider circuit than that used by the sailplanes.

3.4.2 Continuously look out for traffic.

3.4.3 Broadcast your intentions.

3.4.4 Make your downwind checks. A slightly amended version of the pre-taxi and takeoff checks is suitable.

3.4.5 Make appropriate aerodrome traffic calls at the downwind point.

3.4.6 When on base, carefully check both the left and the right hand downwind legs for sailplane or NORDO traffic. If a conflict is apparent and you are in radio communication with the ground station and can receive traffic advice, make a wide right hand 360 degree turn to rejoin left base so as to land behind the traffic.

If conditions are busy, or if any doubt exists concerning the intentions of the conflicting traffic, turn on to final and overshoot at not less than 100 feet agl (remember traffic may cross the runway at 1000 feet agl and above). Pull up and join a left hand circuit.

3.4.7 On final, the following minimum checks are recommended:

- Brakes (toe functioning, parking off)
- Wind direction and speed
- Airspeed
- Flap setting

Crosswind limitations see Schedule A (for the Scout, the demonstrated crosswind component is 15 knots (17 mph). Because of the rope, plan to be 100 feet agl over the boundary fence. From this height, in a no wind/high density altitude situation, a shortfield landing may be necessary. On short final, reduce the airspeed to (not below) 120% of clean stall (for the Scout this is 60 mph indicated). If in any doubt, drop the rope and go around.

The normal landing speed is 130% of clean stall (65 mph indicated in the Scout) plus the gust factor — that is if the wind is 15 gusting 20 mph, the landing speed on final would be 70 mph indicated. In strong winds it is recommended that the indicated airspeed should not be less than 65 mph.

3.4.8 It is not recommended (due principally to the danger of nosing over) to use the wheel brakes to shorten the ground roll. It will generally be necessary to use them to retain directional stability. If you find that significant use of the toe brakes is required to avoid taxiing into the far boundary fence, close down the operation. It may be that the long ground roll is due to a tailwind and/or the runway gradient, in which case it will be necessary to change ends. Except under very light traffic conditions, avoid the situation where sailplanes are landing one way and the towplane is landing the other.

Conditions may warrant a low pass to drop the rope followed by a go-around and a lower approach.

3.4.9 Exercise extreme care backtracking on the runway. Pull to one side as soon as your ground speed has reduced to normal taxiing speed and make an aerodrome traffic call as you turn to the backtrack.

In high winds be extra careful of the crosswind to downwind turn. On crosswind, the stick should be back and into wind. On making the turn, the stick should be moved to the diagonally opposite position (forward and out of wind). On completing the turn, move the stick to the full forward position.

In very high winds, and if a landing can be made safely in the first third of the runway, configure the operation to take off from that position rather than backtrack. If this is not possible, shut down the towplane and get help (minimum of three people) to pull the aeroplane straight back.

3.4.10 Landings on soft or rough fields are usually three-point landings to lessen the likelihood of damage to the aeroplane due to high landing loads. It is possible to make a three-point landing in the Scout up to the demonstrated crosswind velocity. Wheel landings are hard on the equip-

ment and potentially dangerous on a rough (grass) strip. Wheel landings should only be used in the case of an extreme crosswind. It is recommended that if conditions are such that a wheel landing is necessary, the operation should be shut down.

3.5 Shut down

3.5.1 Idle at 1000 to 1200 rpm
Check 121.5 MHz for ELT
Electrics off
Live mag check
Mixture to cut-off
Switches off

Do the live mag check at lowest possible idle. Switch off both mags together momentarily. The engine should start to die. Switch back on both mags and idle again at 1000 to 1200 rpm before reducing the mixture to cut-off.

3.5.2 The last thing to do after you disembark is to look back and check that ALL of the switches are off.

3.6 Radio procedures

In a study published by the NTSB entitled, "Midair Collisions in US Civil Aviation,1969–70" (NTSB AAS–72–6), it is reported that:

"Most of the 1969-70 midair accidents occurred at or near an uncontrolled airport, at low altitudes, at low closure rates, in visual flight conditions, during daylight, on weekends, and between general aviation aircraft."

Traffic density and aircraft movements at a busy gliderport are well within the limits that would justify air traffic control. Notwithstanding the "see and be seen" ("see and avoid") principals used at gliderports, the proper use of the radio significantly enhances safety. This enhancement particularly impacts on towpilots, the greater part of whose flying takes place in and around the aerodrome traffic area.

The object of radio calls is to alert other traffic as to your position and to make them aware of your intentions. Another safety enhancing use of radio calls is to give traffic advisories. (For example, a pilot backtracking the runway may not have appeared to notice traffic on final). Except in emergencies, traffic advisories should be just that, advice (eg."ICO. Be advised that traffic is on final.") Only in an extreme case would an "instruction" be given (eg."ICO. Hold short. Traffic landing 07.") Traffic advisories should never take the form of a "clearance".

The following calls should be made on the mandatory frequency or the airport traffic frequency as appropriate:

- before taxiing
- before taking off
- returning for landing
- downwind
- final
- before backtracking

Radio calls should be kept as brief as possible. The following format is recommended:

"aerodrome" TRAFFIC <message> ("aerodrome")
EXAMPLES (at Cowley)

TAXIING
Cowley traffic.
PCK taxiing to position for 21.
(Cowley)

TAKING OFF
Cowley traffic.
PCK departing 21. Glider in tow.
(Cowley)

RETURNING FOR LANDING
Cowley traffic.
PCK 2 miles northwest,
inbound upwind for 21.
(Cowley)

Cowley traffic.
PCK 2 miles southwest,
inbound downwind for 21.
(Cowley)

DOWNWIND
Cowley traffic.
PCK downwind left for 21.
(Cowley)

BACKTRACKING
Cowley traffic
PCK backtracking 21
(Cowley)

The repeat of the aerodrome name (shown in parentheses) is recommended as a courtesy to pilots at adjacent aerodromes using the same traffic frequency.

The before suggested format embodies the usual format for radio communications:
WHO WHO WHERE WHAT

Example

Cowley traffic	WHO
PCK	WHO
2 miles northwest	WHERE
inbound upwind for 21	WHAT

4 Schedules to the Rules

The following pages contain schedules to the towplane operating rules given before in Section 2.0. The Schedules contain detailed information required in the implementation of the rules. The inclusion of this information in the form of schedules allows a more brief statement of the rules and for convenient future amendments to the detailed information.

Before using the ASC Scout C–GPCK in cold weather/winter conditions, refer to 2.6.14 Miscellaneous

schedule A

Environmental limitations

The major environmental considerations during the towing operation are density altitude, ground maneuvering wind speed, and crosswind component. The following information is intended as a guide to the towpilot. Local and/or personal conditions might dictate further limitations to those implied by the data below.

8GCBC Bellanca Scout (180 hp)

a) Wind speeds:
demonstrated crosswind 15 kts
max. operating without ground crew assistance 25 kts
caution for taxiing 15 kts

b) Density altitude (typical for Alberta):
The Scout Operating Manual and the Koch Chart indicate the following values when towing a two-place training sailplane (with a small allowance made for pilotage error).
- grass surface
- zero wind
- 2150 pounds

OAT °C	ground roll (feet)	rate of climb (feet/min)
0	1070	430
10	1210	360
20	1480	290
30	1740	250

schedule B

Airspeed limitations C-GPCK

	CAS mph	IAS mph
never exceed (V_{NE} – red line)	162	162
caution range (yellow arc)	130-162	132-162
maximum structural cruise (V_{NO})	130	132
normal operating range (green arc)	57-130	50-132
flap operating range (V_{FE} – white arc)	52-100	42-102
maneuvering (V_A @ 2150 lbs)	115	116

Remarks

CAS – calibrated airspeed is IAS corrected for installation and instrument error

IAS – indicated airspeed assumes zero instrument error only

V_{NE} – maximum safe airspeed, not to be exceeded at any time

V_{NO} – not to be exceeded, except in smooth air only, and then with caution

V_{FE} – not to be exceeded with flaps extended

V_A – no full or abrupt control movements allowed above this airspeed

schedule C

Let-down procedures C-GPCK

(subject to revision – first revision for 2001

Immediately after release

a) throttle back to 2100 rpm and turn 90 degrees left of present heading

b) maintain 90 mph

CHT is down to 300° F

a) throttle back to not less than 1600 rpm (avoid harmonic arc range of engine rpm)

b) airspeed not to exceed 90 mph

c) adjust flaps and engine setting as necessary when entering and in circuit

schedule D

Takeoff monitoring procedures

At the towpilot's discretion, use either of the following procedures to determine if sufficient runway exists for a successful takeoff:

a) Set a marker at a point half–way down the runway.

   If you have not achieved 70% of your takeoff speed by this point, abort the takeoff.

b) Set a marker at a point 3/5 of the distance down the runway.

If the towplane is not airborne by this point, abort the take-

schedule E

Arrival and departure procedures

a) Climb straight out to 500 feet agl, then make a left climbing turn to clear the circuit area. Be aware that sailplanes may be as low as 700 feet agl along an extended downwind leg in either a left hand or right hand circuit.

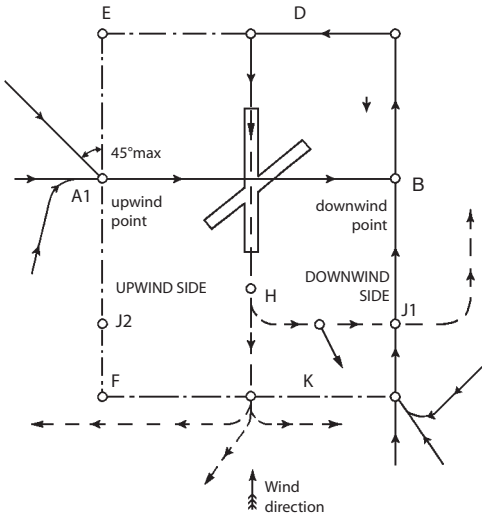
b) For the reason given in (a), the circuit area should be considered to extend for at least 1500 feet on *both* sides of the runway.

c) Do not cross the circuit area at an altitude less than 500 feet above the circuit height. Circuit height for the towplane is normally 1000 feet agl.

d) When approaching to land, enter the circuit area at circuit height.

e) Check for sailplane traffic in the circuit behind you, the inside of the turn, and the circuit ahead of you before turning base or final. Remember, sailplanes may well be at a different altitude than you (usually lower) in the circuit.

f) Non-standard circuits are discouraged. If undertaken for any reason they are done so at the discretion of the Pilot in Command. Implicit in the VFR "see and be seen" principal is that traffic will be found ("seen") at predictable locations around the aerodrome. Be particularly careful of making any modification to a standard circuit.



schedule F

Protocols for fuel management

When fuel is supplied from drums, as at Cowley, proper handling of the drums is needed to minimize the chance of water getting into the drums, or water getting from a drum to the aircraft tanks on refuelling.

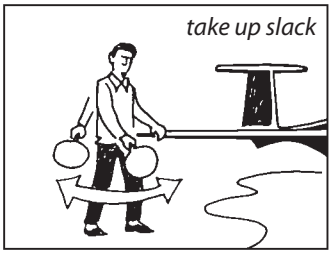
The following procedures are recommended:

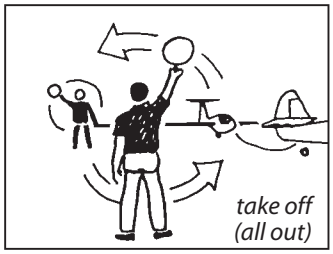
a) Counting the large bung as at 12 o'clock, drums should be stored before use and whilst in use tilted with a four inch lift on the high side and with the low point at three or nine o'clock. This will ensure that any rain will drain over the low lip before pooled water reaches the level of the bungs.
b) Whenever a drum is moved, transported, or disturbed, wait 10 minutes before pumping fuel to allow any water or sediment in the drum to settle to the lowest point.
c) The pump standpipe should always be a few inches clear of the bottom of the drum to avoid any possible water intake.
d) During periods of rain, the drum in use should, whenever possible, be covered with a waterproof sheet.
e) Filters in the delivery line should be changed regularly according to the manufacturer's recommendation.
f) If partially full drums are kept over until the next meet they should be tested for water contamination by using water sensitive tape or paste on a stick. If water is present it should be removed as much as possible by siphoning the very bottom of the drum.

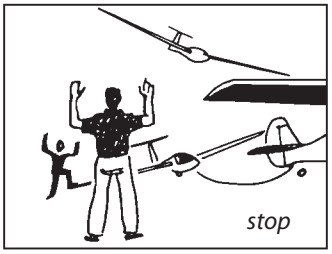
schedule G

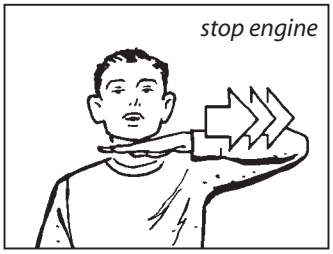
Ground signals to towpilot

1	Sailplane wings level (ready signal)	Arms outstretched, shoulder high.
2	Take up slack	Arm swung from side to side below shoulder height.
3	Take off (all out)	Arm swung in circular arc continuously from below waist to above head.
4	Stop	Both arms vertically upwards.
5	Stop engine	Cut-throat action.
6	Towplane ready for take-off	Fishtails rudder.

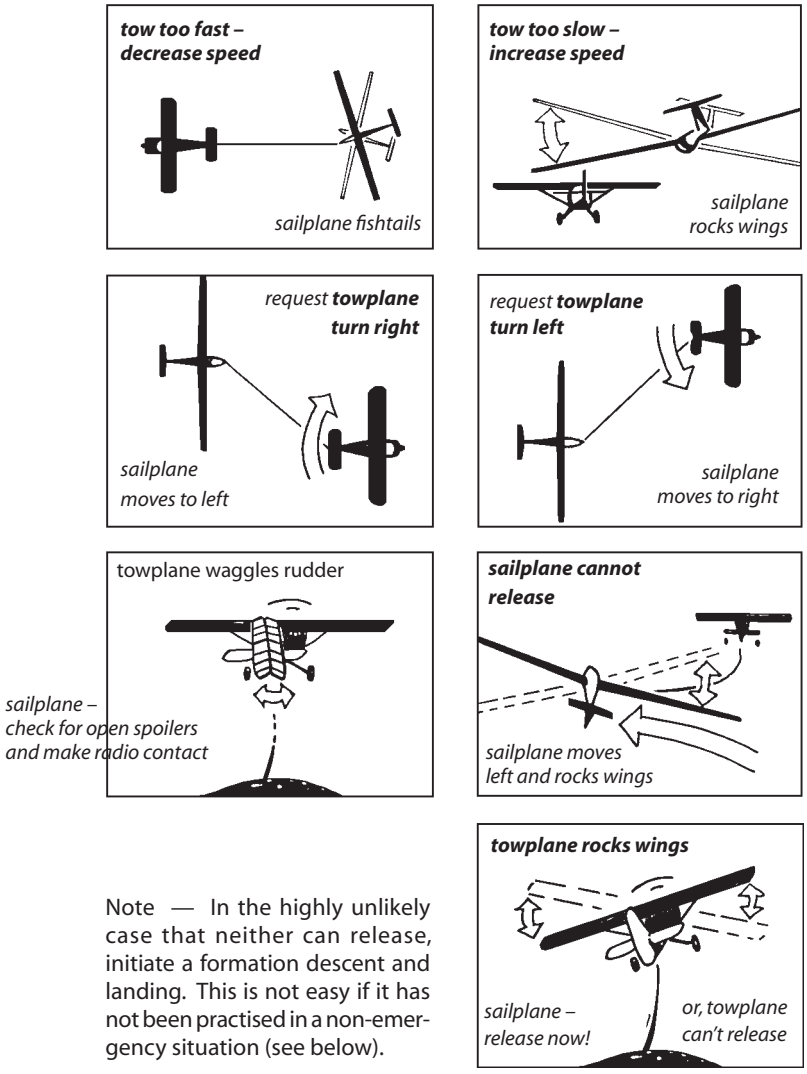








Emergency signals on tow



Note — In the highly unlikely case that neither can release, initiate a formation descent and landing. This is not easy if it has not been practised in a non-emergency situation (see below).

Descent on tow — *Gradually* initiate a descent rate that can be matched by the sailplane. If the rope keeps bowing and the sailplane tends to catch up or goes high on the towplane, reduce descent rate or, if in radio contact, have the sailplane open spoilers somewhat to increase drag. Keep turns shallow. On final, expect the sailplane to descend to low tow position and land first. Make a shallow, power-on approach.

schedule J

Special conditions at aerodromes

General The towpilot shall comply with the procedures given in the current issue of the Canada Flight Supplement.

Edmonton Soaring Club • Chipman

For normal non-ASC operations at Chipman, PCK is always the last aeroplane to be started during the day, and the first one to be shut down when towing activity decreases.

Unless otherwise instructed, do not drop tow rope on landing. Standard procedure at Chipman is to leave rope attached to towplane. It will be retrieved and dragged into position when towplane takes position in front of the glider awaiting tow.

The runway at Chipman is 400 feet wide. Sailplane launches are done on the southern-most third of the runway. The centre of the runway is for towplane landing, the northern third of the runway is for sailplane landings.

When approaching runway 27, care must be taken not to drag the tow rope over the road (a car has been hit by a weaklink in the past). Maintain 2400 feet (200 feet agl) until over the runway threshold, throttle back and lower the nose to maintain approach airspeed.

When approaching runway 09, the same procedure should be used to avoid damaging the crop in the adjacent field (or ensure approach is over the narrow runway extension used for winching).

For noise abatement, do not tow over the town of Chipman, and try to vary tow patterns to not constantly fly over the same neighbouring houses.

Seasonal operations

Spring • Summer
The Chipman runway can be very soft and muddy in places in the spring, or after periods of prolonged rain. If unsure, it is advisable to walk the runway before using to determine places to avoid for takeoff and landing. The worst spot is usually on the south side of the runway, adjacent to the clubhouse. Water can also be standing in low spots right across the runway, and masked by tall grass.

Winter
Gliding activity typically continues throughout the winter at Chipman, depending on temperatures and snow. Before using PCK in the winter, the cold weather/winter conditions are mandatory – see 2.6.14 Miscellaneous.

Cu Nim Gliding Club • Black Diamond

Runway 07, 25, 32
takeoff – left hand side landing – right hand side
Runway 14
takeoff – right hand side landing – left hand side

Downwind takeoff – beware
- Do not attempt a downwind takeoff to the west, north or south.
- Do not attempt a downwind takeoff to the east if the downwind component is greater than 5 knots.

Do not overfly as much as possible, the farms adjacent to the aerodrome. These are located to the SW, NW, SE, and NE of the field.

Spin training area
A spin training area has been designated at Black Diamond. This area is located about half a mile due south of the field and is about one full section in area. Avoid this area as much as possible. It is highly recommended that the following radio call should be given before entering this area:

"Black Diamond traffic. PCK entering south training area. Black Diamond."

For cold weather/winter operation – see 2.6.14 Miscellaneous.

Runways 14/32
Watch for badger holes typically on the threshold of both runways. The runways 14/32 are short and narrower (100 feet) – use caution when taking off and landing while traffic is on the runway. These are typically only used when a strong cross-wind favouring either of these runways is present.

Runway 32 has a 150 foot to 250 foot ridge about one half mile from the end of the runway. Expect turbulence and sink from the ridge in windy conditions. *Note* – there are few landing areas for a glider to the north of the field between runway and ridge.

Runway 14 has upslope starting 200 feet from the end of the runway; use caution when landing on 14 to remain clear of the fence at the threshold. Tows shall be conducted so as to remain north (beware of 500 foot rise to the north) of the river, or south of the slough until well above circuit height.

Runway 25 Caution must be exercised when taking off on runway 25 as turbulence and sink may be encountered. The problem is particularly likely when the wind is above 10 knots from the SW. The problem is exacerbated by poor overshoot choices to the west and by trees at the west end of the runway. If in any doubt, take up a one-place sailplane first.

Runway 25 has about a 2% upward slope. Tows shall be conducted so as to remain north of the river or south of the slough until well above circuit height.

schedule K

Daily inspection checkist

Date:
Tach time:

Tach time to:

• annual inspection:
• air filter change:
• oil change:

weight and balance:
C of A:
C of R:
intercept orders:

oil:
air filter:
gascolator:
windshield:
prop condition/end float:

fuel quantity/on:
harness secure:
controls free:
gas tank vents:
lowest fuel drain:

wing tank drains:
control surface mech:
landing gear U-bolts:
empennage brace wires:
grease tailwheel if required:

tow hook assembly:
pitot/static ports:
tailwheel assembly:

tires:
brakes (pressure/leaks):
fuel caps secure:

Snags:

Name of pilot:

Licence number:

Signature:

The following items are not to be removed from the ASC towplane C-GPCK.

Before ferrying the towplane from one place to another, please ensure these items are in the back of towplane and well tied down.

first aid kit & survival kit

tiedown kit

repair kit (spare tire & tube — U bolt)

shoulder bag
with jumper cables, headset,
cleaning clothes, used spark plugs

external power plug

If any of these items are used or lost, please notify the ASC Chief Towpilot (address see inside cover page) for *immediate* replacement.