

Bonanzas to Oshkosh XXIX Flight Leader Pre-Briefing

Hello Gentlemen,

Congratulations!

You have been selected to fly Bonanzas to Oshkosh as Flight Leaders, also known as Element Leaders. It may be more fun to gently saw on the throttle and work the yoke and pedals to keep accurate station, but we need your superior skills & judgment for the more responsible role of Flight Leader.

Train to Lead

We have an important request. We want Element Leaders to practice Leader skills between now and our arrival at RFD. Our training clinics have focused on wingman flying, quite successfully. We haven't had more than a couple weak wingmen each of the past few years. Zero last year! You guys were their safety pilots, so pat yourselves on the back. But, we still have a lot of work to do on Element Leading skills. Other than telling ourselves to "fly the brief", we have had little to offer our Element Leaders in the way of training advice and material. As a start, here's what we want you to do:

In your 'regular' flying, practice slightly steeper approaches to a point about 1500 feet down the runway. Prepare yourself mentally for the Oshkosh Runway 36 sight picture. Do not allow "habit" to lull you into approaching short of the proper aim point at Oshkosh. We aim for the Purple Dot, 1700 feet down. During your B2OSH practice, do a few approaches and landings 15 seconds in trail of another airplane.

Also in your regular flying, check a few things. Know the power settings you'll need to achieve the numbers listed below. Verify accuracy of your airspeed indicator. Make sure it's within a knot or 2 of accurate. The guy who performs your pitot/static tests will find gross problems. Compare indicated airspeeds with formation partners.

Fly as wingman and do a 7 or 8 second 180 degree break. That will put you about 15 seconds behind your leader. Pay attention to the sight picture. Ask him to turn. Work on following him without cutting him off or lagging behind. It's difficult to determine distance in trail at 3000 feet, and it's very difficult to see changes. Basic experience with the sight picture will improve our abilities significantly. Then, if you fly to RFD in a gaggle, refresh that sight picture during your flight.

In addition to practicing element landings, land 10-15 seconds in trail of your practice partner. Pay attention to the sight picture. Many of us do overhead breaks, and routinely land 6-10 seconds in trail. For B2OSH, 10 seconds is getting too close. When we do overheads "at home", the runway is not filled with airplanes in both lanes. Do NOT "save" an approach closer than 10 seconds in trail because you've "done it before". Multiple wakes and a runway full of airplanes is a different situation.

You all know what it takes to lead elements in B2OSH. Whether at clinics or practicing with friends, for this year, we ask you to think about training to lead an element and to work on the skills.

Pre-RFD Briefing

While KISS is always the goal, we believe Element Leaders can handle a little more complexity. We will accept feedback regarding our procedures AFTER this year's flight. Please, do not kibitz at RFD. Thank you!! Set good examples during the Main Briefing. There is no reason why one of our Element Leaders should ask a question or otherwise interrupt during the main preflight briefing. Got questions? Ask now!

This pre-briefing is offered so that the main briefing in RFD can focus on immediately important issues that cannot be planned for in advance. Like weather and field conditions at Oshkosh.

When you taxi in at Rockford, please put a RED card in your window to tell the line crew you are a Flight Leader. If you are a Row Leader, please put a black "X" on the red card. More about the cards later.

Flight Briefing

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Briefing

Our Flight Briefing will be conducted in 3 stages. The Main Briefing in the KRFD auditorium, Row Briefings (12 pilots) on the ramp at your Row Leader's airplane, and Element Briefings (3 pilots).

The Main Briefing will focus on the day's conditions and a review of the hand-out briefing materials. We have already been briefed regarding procedures, routes, and altitudes.

Row Briefings will include walk-throughs of the basic flight, and the Emergency Alternate Runway Procedure.

Element Briefings will focus on matching aircraft performance in the take-off and landing protocols. Element Leaders will decide who flies Left and Right Wingman positions. See below **Take Care of Your Wingmen**.

Your job as Flight Leader is manifold, but the major points are to fly smoothly so your wingmen can easily follow, and to **HIT YOUR NUMBERS!** To fly smoothly, you need to anticipate changes and notice them early, so the corrections can be small and subtle. That's a very difficult job when your cues are in an element half a mile directly ahead of you. That's why it is so important to hit the numbers.

What are the numbers?

15 seconds (30 for Row Leaders)

100 KIAS/500 FPM

3000 MSL

125 KIAS

110 KIAS

3000 MSL

100 KIAS/600 FPM approach in landing configuration

1. 15 second take-off intervals. A flag man with a stopwatch will wave you off. Only 5 Leaders will make "Rolling" calls this year.
 - 1a. Row Leaders will be flagged off after a 30 second interval.
2. After lift-off and gear up, set power for 100 knots indicated and 500 feet per minute climb. If anyone needs more climb speed for engine cooling, they can fly Ripon/Fisk and climb as fast as they want. Know the power setting that yields 100/500.
3. Cruise altitude is 3000' MSL. Not 50 feet higher or lower for wake turbulence. Ceiling may dictate 2500' MSL cruise altitude. After level off, there **should** be 15 seconds between elements - 30 seconds in front of Row Leaders. That's roughly 3000' and 6000' respectively.
4. Cruise at 125 KIAS. Plus or minus zero, if all works out perfectly - which, of course, is impossible. Know the power setting that yields 125 KIAS in your aircraft.

When confronted with up or down drafts, please leave throttle alone. Maintain altitude and accept airspeed excursions or smooth out the excursions by accepting half the rise or fall. Your choice.

If you detect you are falling behind, make a small power increase and be patient. Let's see if we can make do with a 130 KIAS maximum airspeed. 127 or 128 is better yet. Be similarly gentle and patient when slowing. If small throttle decrease & patience aren't enough, gently slide to one side or the other. If off the 'magenta line', then slide toward it. Wait a minute or 2, then, if off track, slide back. You are following the elements ahead – period. But, be aware of the correct ground track. The Magenta Line. When appropriate, nudge the formation back toward the line. Everyone behind you expects the

flight ahead to be on course. The course line is a briefed item. Staying on or near it is part of “fly the brief”. To assist with flight situational awareness, 5 Leaders will announce over Janesville and Juneau.

5. All waypoints on the route are Fly By waypoints. They are not Fly Over waypoints.
6. On Bonanza Lead’s order, slow to 110 KIAS. Bonanza Lead will give a 10 second heads-up, then call for slow-down on the Flight Frequency. Practice and know the power setting for 110.
7. Cross POBER at 3000’ MSL. Turn final at POBER. Do NOT overshoot. If you overshoot, elements behind you HAVE to also overshoot, lest they cut you off. You just started the big snake. What if the preceding element slows early and you find yourself too close? Fly over POBER, turn inbound, clear traffic, and go around with your whole element.
8. After finishing the turn at POBER, slow to approach speed of 100 KIAS. Call “ELEMENT XX GEAR DOWN, LIGHTS ON” on flight frequency. Visually check that your wingmen’s wheels are down. Don’t forget your own gear & lights.

Know the power setting that will yield 100 KIAS and roughly 600 FPM down with gear down.

9. Aim for the **Purple Dot**. Look at the airport diagram on the NOTAM. Aiming for the **Purple Dot** will require a slightly steeper than normal approach. If you go for the numbers, your wingmen and the Element Leader behind you will rat you out. Be aware of the guy behind as much as the guy in front of you.

Those are your numbers. Hit your numbers the best you can, **but please understand that formation flying is a VISUAL exercise. The numbers are tools to supplement what you SEE out the window.** The goal is a little over 3000 foot in trail spacing en route. Please find a partner and fly in trail at 125 knots. Do a 7 or 8 second break and you will roll out about 15 seconds in trail. It is very difficult to determine changes at that distance, but that’s the picture you want.

Element Spacing

We want to land with 15 second intervals. Same as the take-off interval. With our straight in approach to Runways 36, it is counter to our purpose to go like hell to catch the element ahead. We do NOT want to close that distance because there is no way to get it back in order to land with enough separation between elements.

After take-off and climb-out, we will ALREADY have approximately the correct spacing.

If we hit our numbers, the only speed changes will be to maintain spacing, not to radically change it. 15 seconds at 125 knots is a little over half a nautical mile - a tad

over 3000 feet. As we slow to approach, that 15 seconds becomes less distance between elements, so as the element ahead of you touches down around 60, you will be closing to about 1500' - perfect! The guy ahead will be slowing on the runway; 1500' will close to about 1200' when you touch down. Again, perfect. At 3000' separation, the wake turbulence is less if (when) you happen to catch it. Fly closer ONLY to maintain visual contact with the preceding element.

If you think you are a little behind, that is OK, as long as you can see a couple elements ahead. We are NOT trying to catch up! Anything above 125 knots will be to keep from falling behind.

If you perceive you are creeping up on the element ahead, make a very small power decrease, and/or slide gently to one side for a minute or so, then slide back in trail. Use these adjustments to correct track error. There is NO need to fly 140 knots at any point in the flight. Not even 130, really. Small power changes, only, please. Then be patient.

The Row Leaders will NAIL their airspeeds and vertical speeds. The Element Leaders immediately behind them can RELY on that. The Row Leaders are NOT going to run away from anyone. They will not speed up over 125 unless absolutely necessary to keep the flight ahead in sight, and they will make very gentle heading changes if they need to create space between them and next element ahead. Each Row Leader will re-establish order for the tail end of the flight.

If you see the element ahead move to one side, do one of 2 things, depending on your spacing. If nicely spaced or a little close, follow him. If you are a bit farther back than 15 seconds (3000'), continue straight ahead and take advantage of cut-off.

The POBER snake: We are going charm that poisonous viper again this year with our nearly straight route and the simple altitude profile. The route is shown on the B2OSH web site. We're going at 3000 MSL all the way to POBER.

The other tool is the go around. Where accordion effect tightens up spacing, an element going around inserts extra space for succeeding elements.

Objective Go-Around Criteria

Adhere to these, in addition to the subjective criterion "I think we're too close":

1. If a snake has started before you reach POBER: maintain 3000, turn inbound, and go around when clear. Do not overshoot POBER, do not collect 200 dollars.
2. If you need to S turn on final, DON'T. Clear traffic and go around.
3. If you have to slow below 90 knots to remain safely behind preceding element, then clear and go around.
4. If you have to approach shallower than briefed to keep previous element from going under your nose, then clear and go around.

Please program the route and have GPS data ready should you need it.

If there is a runway abort or other delay during the take-off, you might be leading a flight

of 100 or more - with zero contact with the elements ahead of you. Don't cut any corners and don't try to catch up. Lead the flight behind you. Fly the briefed route. Fly the briefed numbers. You know your element number – ask the preceding Element Leader where he is (distance from next waypoint), to get some SA for you and the flight you are leading.

Pay attention to the “magenta line” on your GPS and don't wander off course. Be aware of Fon du Lac temporary Class D airspace. We will pass about 2 miles west of FLD Delta. FLD Class Delta is NOT charted. It's not depicted on your GPS, because it's only Class D for the show. Consult the NOTAM, know where it is, and don't fly into it.



Fly By Waypoints

Look at the graphic. It's self-explanatory. Treat all B2OSH waypoints as Fly By waypoints.

We have simplified the routes to runways other than 36. Regardless of target runway at OSH, we will fly the same route to POBER. If 36, turn left for the runway, as we usually do.

If landing Runway 27, we will descend to 2000 MSL and slow to 100 KIAS, continue past POBER, and turn onto a wide left downwind 27. This turn is critical. We will provide detailed instructions in the Main Briefing and walk through it in Row Briefings. On downwind, call Gear Down before turning base. Aim for the **ORANGE DOT**.

If landing Runway 18, we will begin descent to 2000 MSL and 100 KIAS, continue past POBER to parallel 36 onto a wide left downwind for 18 Right (can't land on 18L – no place to taxi off). Call Gear Down before turning base. Aim for the **PINK DOT**.

If landing Runway 9, same as above, but turn onto wide left downwind for 9. Aim for the **WHITE DOT**.

We will walk through these procedures in the Row Briefings on the ramp at RFD.

Here's a link to the route on our website:

<https://www.b2osh.org/Web/B2OSH/Pages/Flight/Route.asp>

Prepare to insert 1 or 2 departure waypoints into the routes.

For a Runway 1 take-off we will go direct to KJVL. It's a straight shot.

For Runway 19 take-off, we'll climb straight out 5 miles to FANGU, then turn right to CUDUP, then turn right to KJVL.

For 07 departure, turn left at SUGEE.

For 25, insert ZEVBU then COTON. Two right turns to KJVL.

Do NOT use any frequencies other than those assigned!

Please! No "element frequencies"! If there is a problem, we need to hear you.

Take care of your wingmen starting from the time you meet them.

Interview them upon arrival. Know their names. Get a sense of their ability and experience, and decide who will fly on the left & right sides. If you have concerns about your wingmen, please talk to your Row Leader. Please try to do this on Friday. If you do a good job with this, your guys will be FAR less likely to gum up the main briefing.

After the Row Briefing, get with your 2 wingmen and do a final Element Briefing. Talk about the take-off. Demonstrate the tempo of your head nod. Talk about gear operating speed limits and **have a plan for flaps on landing**.

Before engine start, walk around each of your wingmen's aircraft, looking for chocks, pitot covers, open windows, and open baggage doors. Look at their cowl door latches and that their cowl flaps are open. If one of your guys added a quart of oil, **MAKE** him check that the filler cap is secure. On the runway, check for seatbelts hanging outside cabin doors. This is an exciting time. Somebody might forget something. Help 'em out!

Emergencies. In the event of a problem during the flight, be prepared to escort, or assign your other wingman to escort, the airplane with a problem. That group becomes a 2-ship with the stricken craft as Lead and the escorting craft as Wing. Escort will offer any assistance he can, while keeping a safe distance away. Should an aircraft go down, escort will be there to circle and help SAR find the site. Get away from 3000' MSL. The pilot of the stricken airplane is obviously PIC, but it is a **BAD** idea to turn back to RFD. That's head-on into a whole lot of Bonanzas and Barons.

Debrief. We conducted a 3 tier, top down, preflight briefing. Main Briefing, Row Briefings, Element Briefings. Debrief will be 3 tier, bottom up. Element Debrief, followed by Row Debrief, and debrief by overall flight leadership. Set a time for your

Element Debrief before taking off from RFD. Three pilots only. We recommend immediately after tying down. Address safety issues, if any, first. Take written notes of significant debrief items.

In RFD, Element Leaders will receive a Debrief Form from your Row Leader. It has space for specific comments about the flight. We are interested in your assessment, based on objective observations, of the performance of your 2 wingmen, and of the element ahead of you. There is a block for you to beat on B2OSH leadership, too. There is NOT a block for radio discipline issues. All calls will be on the common flight frequency. We will hear everything you hear. Before exiting the Margarita and pizza party, please fill out your Debrief Form and bring it to your Row Debrief.

Row Debriefs should include only the 4 Element Lead pilots in the Row. Row Leaders will conduct their respective debrief. Discuss safety items first. Row Leaders will collect all four Debrief Forms from their Row (including their own).

Overall Debrief of Row Leaders will be conducted in the big tent Saturday at 5:00 PM. Row Leaders will turn in their Debrief Cards. Row Leaders will have opportunity to discuss route, altitudes, take-off timing, and effectiveness of clinic training.

You are the most experienced pilots in our fold. I cannot imagine a circumstance where any of you would interrupt the main briefing to add something, ask a question, or otherwise comment. If you have any concerns about the flight, now is the time to speak up – not during the briefing. Unless, of course, you think we are about to kill somebody.

This is going to be a great flight because you are all leading it. We thank you for your skill and good judgment. Many of you rode as safety pilots at one or more of the Regional Clinics. You guys are the real heroes of Bonanzas to Oshkosh.