

# LOW LEVEL TACTICAL NAVIGATION PRIMER

- PURPOSE: What it is...
  - Provide guidance and examples along the path toward fleet level planning and execution.
  - Provide detail and guidance to facilitate planning and execution in accordance with FTI specific intent.
- What it isn't
  - Not designed to make you a tactical savant.
  - Not a replacement for follow on SOPs which you'll learn at the fleet level.

# WHY DO WE LEARN LOW LEVELS?

## IT'S TACTICAL NAVIGATION!

- WHAT ARE WE DOING AND WHY?

- The Marine NTTP sums it up pretty well.

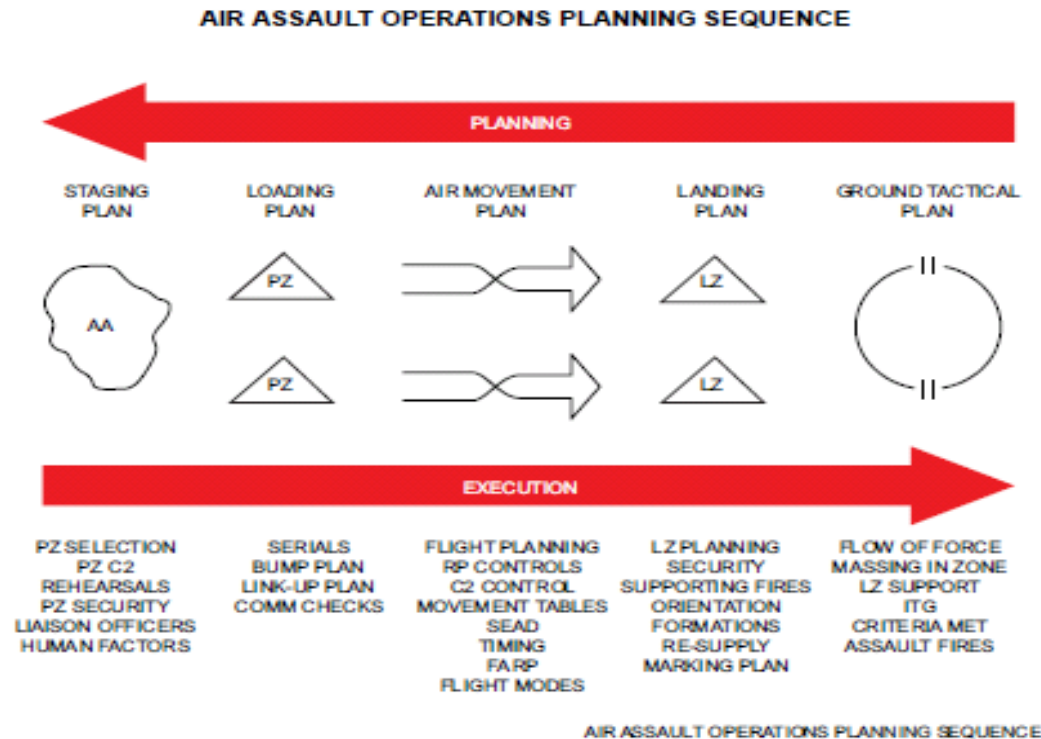
**4.2 Terrain Flight.** Terrain Flight (TERF) is the employment of aircraft flight profiles in such a manner as to utilize terrain, vegetation, and man-made objects to enhance survivability by degrading the enemy's ability to visually, optically, aurally, and electronically acquire and target the aircraft. It involves a constant awareness of the locations and capabilities of enemy weapon and acquisition systems in relation to the route of flight and the en route terrain. TERF encompasses those tactical flights in which the intent is to fly at or below 200 feet AGL using low-level, contour, and nap-of-the-earth (NOE) techniques. See [Figure 4.1](#), Terrain Flight Profiles.

- How do we get to TERF?

- **Planning!**

# HOW DO WE PLAN?

- Assault support planning, which includes TERF profiles, is done in reverse order of execution!
- Remember, your route, is only one piece of the greater mission planning puzzle.



If we don't know where we're going, who we're taking or what we're doing when we get there... then we aren't really planning for anything.

# HERE'S HOW IT GOES...

- 1) Start with the ground tactical plan, which for our purposes is going to be your maneuvers (Single ship TLA's, Section maneuvers, etc.)
  - a) First, figure out what maneuvers we need to accomplish per MPTS and a sequence that will achieve those training objectives.
- 2) Then, plan the LZ/Landing plan: LZ Diagrams, environmental, arrival and approach to the zone...
  - a) Find a suitable LZ, develop a plan to get in safely, and produce products to illustrate that.
- 3) The air movement plan is your route: how you're getting there, actions enroute, fuel requirements, timing, communication (who we're talking to and how) etc.
  - a) F.A.L.C.O.N.
- 4) The loading plan either takes place at your departure point or some other PZ (pickup zone). For our purposes, it will consist of our crew, and will take place here at KNDZ.
- 5) Staging plan: when everyone needs to be at the PZ (Pickup Zone), how they need to be situated, who is in charge, etc.....
- 6) Put it all together and brief the flight.

# Planning Basics cont.

## – Planning the actions on objective:

- This is your plan for LZ operations here in Flight School:
  - Tactically, you'll be coordinating with the ground forces to learn their intent (endstate), how they'll accomplish it (tactical plan) and how you can facilitate mission accomplishment in the safest and most efficient manner, how many people they need to accomplish the mission (who they want you to move), what weapons they want to bring (what they want you to move), and their backup plans etc.
  - Where are we landing? Do we need to be in a specific spot... here you get to pick one, but remember that the winds/environmentals could change by the time you get there, so remain flexible! The key here is to have a detailed baseline plan that we can deviate from. (This is the one you brief)
  - What maneuvers are we doing. Develop a plan for the timely conduct of your maneuvers and figure out how to execute those within the bounds of the LZ, it's associated course rules and your timeline (~5min per lap in the pattern).

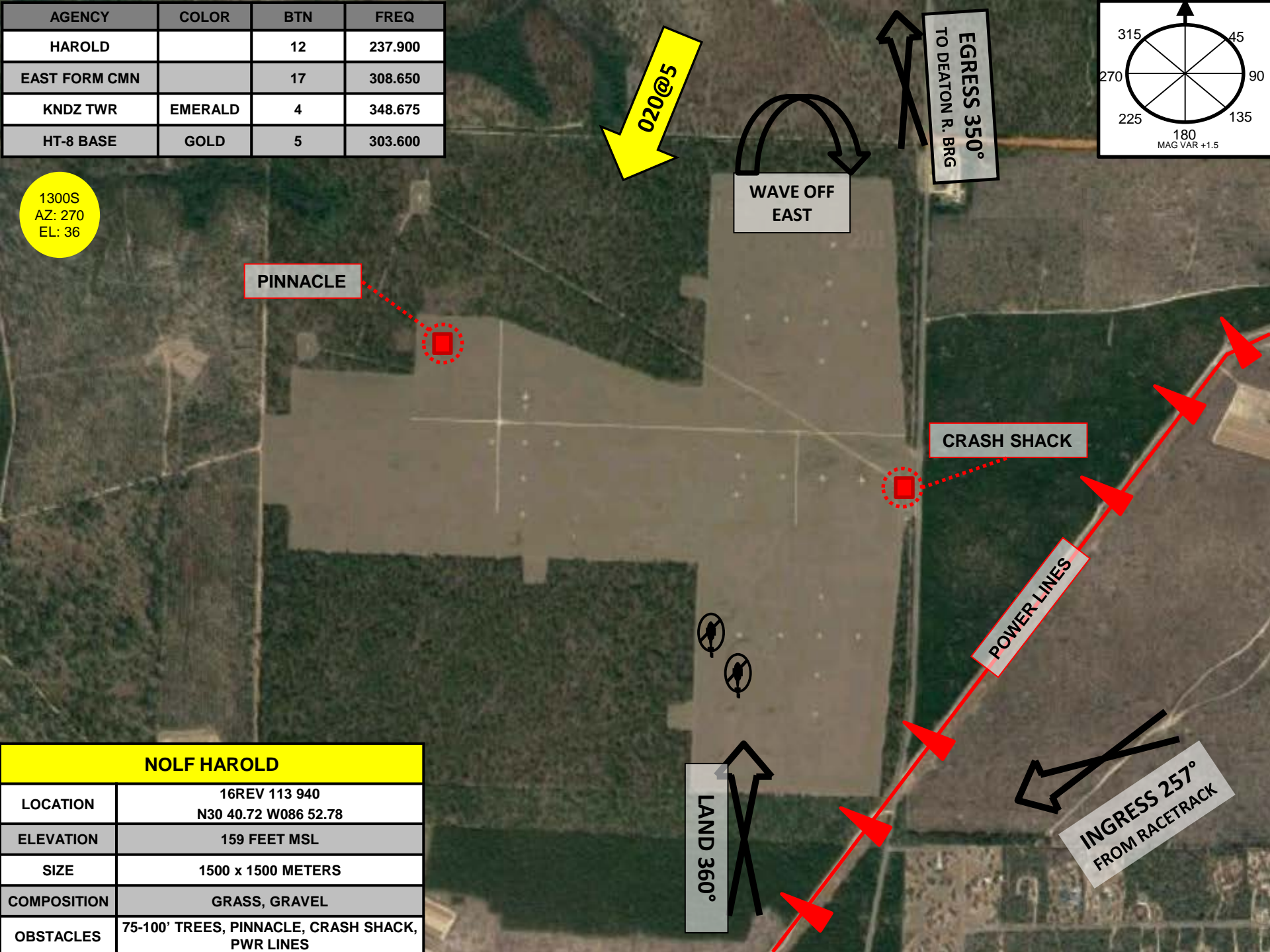
## – Landing plan:

- This is the LZ diagram, the arrival and approach to the zone. The assumption is that no one in your flight has actually been to this zone before. Which is why we make it a "single source document."
- You need a plan, based on the forecast winds/environmentals, of how we'll arrive and eventually setup for the approach/landing in the zone. **Simply saying course rules to land, doesn't cut it. Walk the dog all the way to landing at a specific spot.**
- Over the next few slides, we'll illustrate the landing plan by constructing the LZ diagram and actually tailoring it to the conditions you expect to encounter.
- We'll use NOLF Harold, with the assumption PT. Racetrack is our last CP inbound to the LZ.

AGENCY	COLOR	BTN	FREQ
HAROLD		12	237.900
EAST FORM CMN		17	308.650
KNDZ TWR	EMERALD	4	348.675
HT-8 BASE	GOLD	5	303.600

1300S  
AZ: 270  
EL: 36

NOLF HAROLD	
LOCATION	16REV 113 940 N30 40.72 W086 52.78
ELEVATION	159 FEET MSL
SIZE	1500 x 1500 METERS
COMPOSITION	GRASS, GRAVEL
OBSTACLES	75-100' TREES, PINNACLE, CRASH SHACK, PWR LINES

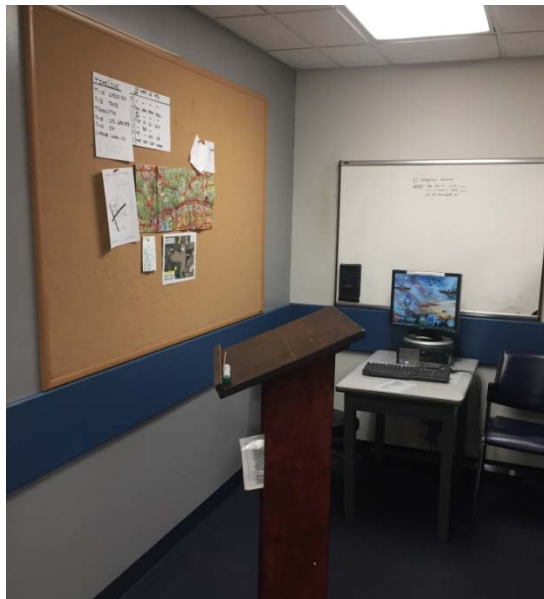


# THE LZ DIAGRAM (LZD)

1. General: Make this a single source document. Once you transition to the LZD in the terminal phase, you should be focused on getting to the zone, not flipping through your smart pack looking for additional information like frequencies, landing spots etc... Additionally, arrange the objects in the diagram to minimize clutter and to make the information flow logically as you use it. Don't put information over areas that you may need to reference.
2. Take a look at the included LZ diagram and find each of these elements. As you do, consider the significance of each as it applies to making an inclusive LZ Diagram.
3. Required items:
  - a) Detailed imagery of the proposed LZ.
  - b) Location: MGRS and Lat/Long (Center point of the zone. As you progress to more capable aircraft, you may shoot your approach to a landing POINT designated by a 10-digit grid. This does not, however, relieve the flying pilot from the responsibility of looking outside and adjusting the approach as necessary).
  - c) Size (general, +/- 50 meters L/W)
  - d) Shape: defining shape characteristics, L-shape, T-shape, A-frame runway etc
  - e) Composition: pavement, grass, gravel, sand, hard pack, loose soil, etc.
  - f) Condition: well/poorly maintained, open desert, level, hilly etc.
  - g) Elevation: MSL
  - h) Slope: if applicable and significant enough to warrant consideration
  - i) Obstacles/Key Terrain: These can and should be depicted symbolically for ease of terrain association between the graphic and real world sight picture.
  - j) North Seeking Arrow and MAGVAR: In this example, the two have been incorporated to minimize clutter and unnecessary text.
  - k) Illumination: Sun/Moon position and elevation. Position the symbol where you actually expect to see it in relation to the zone. (a picture is worth 1000 words)
  - l) Winds: Use forecast winds at your L-Hour (planned landing time)
  - m) Approach and departure path (ingress/egress):
    - i. Headings , points, and next checkpoint. The key here is to paint a picture of where you're coming from, and where you're going when complete in the zone. We may not always arrive at the zone on landing heading, so your diagram needs to illustrate how we're getting the aircraft/section/division set up to land.
  - n) Landing Plan
    - i. Specific spot, direction, formation (depicted is an echelon right)
    - ii. L-hour-: When are we supposed to be there
    - iii. Waveoff plan/direction: expressed as a cardinal direction, NOT right/left up/down etc. Operationally, will most often take into account enemy location and capabilities (we don't want to wave off directly into our enemy's line of fire...)
  - o) Communication
    - i. A list of applicable frequencies while operating. Who are we talking to as we approach the zone, while we're there, while we're leaving and any other supporting agencies that apply (FAC's, HST etc.). Use primary frequency, and alternate frequencies as applicable (UHF/VHF backup).

# THE BRIEF

- Take a moment to look at the setup of the briefing space and read through the notes below it.
- The brief sets the tone for the entire flight. Own the brief and make it your own. Take it as your chance to shine!
- Make sure your briefing space is neat, orderly, and has a logical flow. Remember that you're telling a story with words and pictures.



**LARGE FORMAT TIMELINE AND FALCONE**  
(Optional, but recommended) ALLOWS AUDIENCE TO REFERENCE  
WITHOUT SEARCHING THROUGH THEIR SMARTPACKS DURING BRIEF

TIMELINE		CR	ENRTE	LZ	RTB
T-10 CHECK-IN		F	-	-	-
T-5 TAXI		A	900M	200A	700M
T(xxxxL) T/O		L	STO	-	-
T+15 CP1 GRN RTE		C	4.20	16	12 2,6,4
T+XX IP		O	-	BRF	-
L-HOUR LAND LZ		N	VIS	-	GPS CR
		E	0100	4677	1200 0400

ADD TIMELINE PT'S  
AS NECESSARY

**WIND AND NORTH ARROW**



**AFLD DIAGRAM**  
BLOWN UP FOR REFERENCE DURING  
GROUND OPS BRIEF



1300S  
AZ: 270  
EL: 36

**APPLICABLE ROUTE CHART**  
CHUMMED AND PREPPED FOR THE BRIEF  
NEEDS TO BE CLEAN AND ORDERLY FOR VIEWING  
AT A DISTANCE



**SLAP INDICATOR**  
TO INDICATE ACTUAL PHYSICAL POSITION  
OF SUN/MOON DURING TIME OF FLIGHT  
STILL NEED TO POST SLAP PRINTOUT

**LZ DIAGRAM**  
SAME AS DELIVERABLE PRODUCT.  
BIG ENOUGH TO BRIEF OFF OF

# THE BRIEF

1. **THE BRIEF:** This is your opportunity to set the tone for the flight. First impressions will make or break your flight. If you show up looking professional, have professional products, and have the briefing space set up to maximize attention from all aircrew, you will set yourself up for success.
2. **Smart Pack:** Have the name of the intended aircrew highlighted and put on the seat of where you want them to sit. If they sit in the wrong spot correct them and tell them to sit where you want them. This comes into play when you have larger flights that can include multiple T/M/S's. Remember, this is YOUR brief. You set the tone for the flight. A weak brief will instill a lack of confidence in you from the people involved in the flight. OWN IT!!!
3. **Pen and ink changes-** If it is written in pen or pencil, talk about it during pen and ink changes. The reason being is that when you print everything off, everything should be the same. When you do a pen and ink change there might be a smart pack that was missed. When you are creating +20 smart packs for a flight, this will occasionally happen.
4. **Full page documents (LZD ETC)-** Don't fold them for the aircrew. Let them do it. A good technique is to cut a section out of the top right half of the page. This allows aircrew to fold it and not get caught up in the kneeboard clip.
5. A good technique is to highlight on your personal smart pack information that you would want to show up at night. When you use a neon color highlighter under a green/blue light it will glow and bring your attention to it. Same goes for important data on your charts.
6. **Delivery of the brief:** Brief as if you're briefing professional military aviators who've never operated in this area before.
  1. A good practice is to rehearse your brief and time it. Plan for less than 1 hour for the brief. Use no more than 30% of your time on the administrative portion (smart pack inventory, administration clean up, etc..) and 70% on the "meat" of the brief, which for our purposes is execution phase, i.e. from takeoff, to landing mission complete. The majority of the information covered in the administrative portions is either SOP or already printed in the smart pack products. Do a thorough review of these items, but do not dwell.
7. As you deliver the brief, you're telling the audience a story of your plan. Make it flow. Deliver it confidently and forcefully. Remember, this is your plan and we (the audience) will feed off of your confidence!
8. **"Gotcha's" and Distractors:**
  - a) Constantly saying "umm" or other pet words. Don't do it. Practice your brief beforehand as much as needed to get out of this habit. Have a peer watch your brief and call you out every time you do these things. Soon enough you'll catch yourself doing it.
  - b) Teeth Sucking, lip smacking, and other oral ticks: don't do it.
  - c) Using vagaries like "sorta", "kinda big." Tell the audience what it is in direct terms. A large hill is a large hill, not a really sorta big hill. Same goes for a "kinda tight turn." What does that mean? No one knows. If you tell me we're making a 90deg right turn, that makes sense, and it speaks to the action of changing course and not how many G's we're pulling.
  - d) Briefing CONOPs in detail. This portion is what is known as the "Big Blue Arrow," and should take no more than ten seconds. "Today we're operating out of SOUTH WHITING, using course rules to western op area, running the Green Route and using course rules to RTB to SOUTH WHITING." Done. Keep it simple and don't brief the route prior to briefing the route.
  - e) **Fidgeting-** don't do it. If you don't know what to do with your hands, gently clasp them in front of you as you speak. Additionally, if you aren't pointing with your pointer... don't wave it around for emphasis. If you have issues with this, put it down on the podium. Unless you have really steady hands laser pointers are a big distractor during briefs. People will follow the bouncing red point on the map and not pay attention to what you are trying to convey.
  - f) Set your briefing space (podium, board, chart etc.) up so you can spend the majority of your time detached from the podium and briefing off the board. The podium is a great place to leave your notes... not to lean on and read the 7 page brief that you typed out long form. Use the notes to keep you on track, do not use them to read everything from verbatim. Doing this will instill confidence in your audience and show that you know and have faith in your plan.
  - g) **Eye Contact/Presence-** is a crucial element of communication. Speak directly to the audience, using eye contact as necessary to drive the points home, convey confidence and keep everyone engaged in the brief. The same goes for facing the audience. Do not brief over your shoulder, with your back to the flight.