

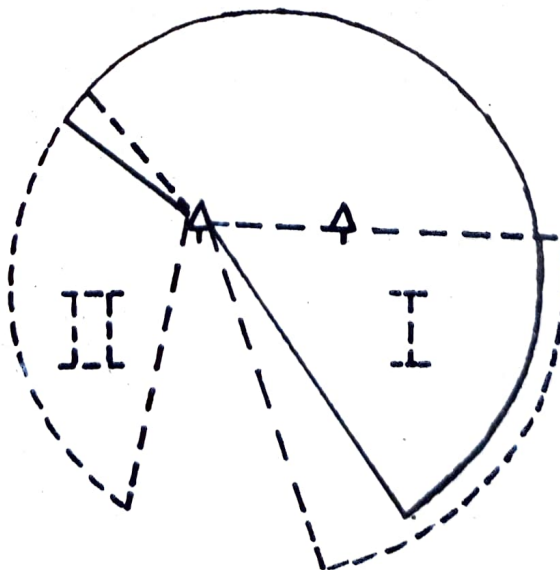
VISUAL LOOKOUT

Four eyeballs are one of the F-4's greatest assets against our single seat enemy. To take this asset and employ it to our best advantage we must have a simple, crew coordinated, visual lookout.

1. Eyes must be focused on a distant object so they have the ability to see something miles away (like another airplane, especially that SEFE or MIG). While leading a tactical intercept, you glance at the radar scope and then transition immediately to the blue sky ahead. Do you realize your eyes are focused to see only those things as far away as the radar scope? By the time you pick up an airplane that close, he might have already sent one of his winged friends to greet your tail pipes (i.e. you lose!).
2. Clouds, particularly distinctly formed cumulus buildups, the ground (the Red area and its sharp mountain tops are good), and as a last choice your wingman can be used to focus your eyes effectively to infinity.
3. A systematic search is a necessity because simply swiveling your head does not allow time for your eyes to focus. Search at one time should be limited to a 30° sector max. Stop your eye movement and allow your eyes to detect another airplane's relative movement. It may be necessary to re-focus your eyes for each sector you visually search; so a ground/clouds to sky, back and forth, may be required. Sounds painstaking, but you'll see airplanes sooner (i.e. maybe you won't lose). The pattern below graphically shows the visual lookout responsibilities. Within the AC and WSO's search pattern specific areas of concentration are left to crew judgment, however, it is recommended that the WSO emphasize his search to the flight's inside.

—— AC

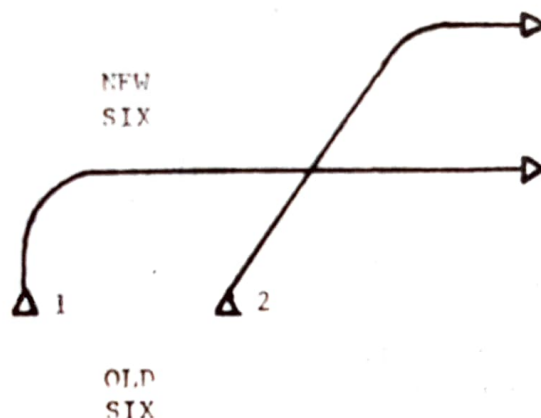
----- WSO



There are other considerations to improve your visual acquisition.

4. Crew coordination so both members are not looking at the same piece of the sky. When straight and level somewhat, but especially when turning the lookout should be divided so one crew member is looking high and the other low. I recommend the AC looks low (since the intakes interfere with the WSO's search), and the WSO high.

5. Visual lookout during turns is important. To effectively check the old and new six all formation turns must be understood by both crew members, but especially the WSO since he assumes the greater visual lookout responsibility while the AC is occupied flying the turn. At low altitude this WSO responsibility increases since more AC time must be devoted to avoiding a smoking binjo ditch situation.



As one initiates the turn both crew members check the old six and two clears the new six. Upon rolling out one immediately belly checks and clears the new six. As two turns he checks the old six and at two's rollout the visual search reverts to the straight and level lookout.

6. A common mistake during visual lookout is looking too high at long range. 10,000 feet altitude separation between you and the bandit at 10 miles required only a 10° lookup, somewhere just above the horizon, not under the canopy rail. So at greater ranges your search should not waiver far above or below the horizon. At closer ranges with a lockon use the canopy code to concentrate which area of the sky you search.

7. You pre-flight should ensure your helmet visor is spotless and the canopy is clean. Experiment with your seat position for your best visibility. While sauntering your way to the area, study the clouds, sun, and gnereral weather to anticipate where the smart bandit will most likely attack. If the mirrors droop under G have the crew chief tighten the screws. RWR audio and scope can assist prioritizing, (along with all other available information) which sectors you should concentrate your search.

8. A couple quick questions on using wing flashes to check deep six; you know wing low, some rudder, (not belly checks). Will that wing flash give the bandit a tally? Is it more disconcerting (especially to a WSO in the scope) than helpful? If you use a wing flash it must be held long enough to allow your eyes to focus on something and then scan the rear sector.

RADIO TRANSMISSION, SQUADRON STANDARD

1. The first call made by someone in the flight with knowledge that needs to be communicated could be the difference between a kill or a loss. Let's not be so presumptuous to think that we are going to be calm and collected when we see our first Mig, and then be able to assess his distance, closure, and angle off exactly. The excitement created by the situation will cause a certain amount of misinterpretation. The requirement for an immediate reaction will also deny the aircrews time for analysis of the exact situation. We already have several code words defined; therefore, we should be cautious of adding more.
2. There are several considerations to keep in mind. The aircrews should avoid saying more than is necessary, and garbling up the radios. This is also true for intercockpit communications. All calls should be based on the KISS principle.
3. The following are the squadron standard calls. They will convey what the aircrew does or does not see and what information is required. "Tally", indicates the bandit is in sight. "Visual" is called when the other member of the element is in sight. "No Joy", is to be used when the bandit is not in sight and his location is desired. "Position" is called when the other member of the flight is not in sight and his location is desired. If the other member is not able to respond with his position, he will transmit "Unable". These standard calls should avoid confusion.
4. When calling a turn for the flight the range of the bandit must be considered. We must remember that range is just an estimate, so don't waste time trying to get the range exactly, the important thing is to get the flight turning. The calls will use the reference ranges of 3,000 feet and 9,000 feet. The call to be made when a bandit is outside 3,000 feet, and no ordnance is being delivered is "Call sign, hard left/right...". The call if the bandit is outside 3,000 feet and ordnance is on the way is "Call sign, break left/right...". The call if the bandit is inside 3,000 feet is "Call sign, jink left/right...". Outside of 9,000 feet the movement of the flight is optional; the flight may extend or turn to meet the threat in the front quarter. The "hard" and "break" call are as defined in the FWS texts. The "jink" call also is as defined in the text, but in this situation it is also communicating range and ordnance information. Caution, if a jink out is started with negative "C" and the bandit is not in sight, the jink out may cause the absorption of an IR missile. A break out of the plane is required to defeat guns. The Mig size target is small compared to what we are used to seeing, so take care when estimating range. Also high overtake by the bandit needs to be considered, since it will probably require a change from a hard turn to a break.