



Lesson Title

Offset, Co-ordinated, Bomb Runs V1.1.

Aim

To teach pilots the basics of using the mark function and HSI and then use then to fly low-level, co-ordinated offset bombing runs against static targets such as buildings.

Time Required

2 hrs. (15 mins ground school, 30 mins TE 1, 1 hr TE 2, 15 mins de-brief).

Topics to be Covered

1. Brevity:
 - a. Cleared Hot.
 - b. Fence In/Out.
 - c. In Hot.
 - d. MUD (Type/Direction).
 - e. Off (Direction).
2. Any points on the Ground School Briefing Material the students do not understand.
3. Fly TE 1 – Using the mark function and HSI.
4. Fly TE 2 – Co-ordinated bombing runs.

Briefing Material

Operation of the HSI:

<http://www.freebirdswing.org/downloads/TrainingLibrary/Lesson5v4.1.62.zip>

Pages 9-15

Operation of the HSI:

<http://www.87th.org/modules.php?name=Sections&op=viewarticle&artid=35>

Using the mark function:

Falcon Manual, Pages 20-12

Using the GM radar mode:

Falcon Manual, Pages 21-30 to 21-31

Mark and HSI V1-0.tac	
By Vosene	

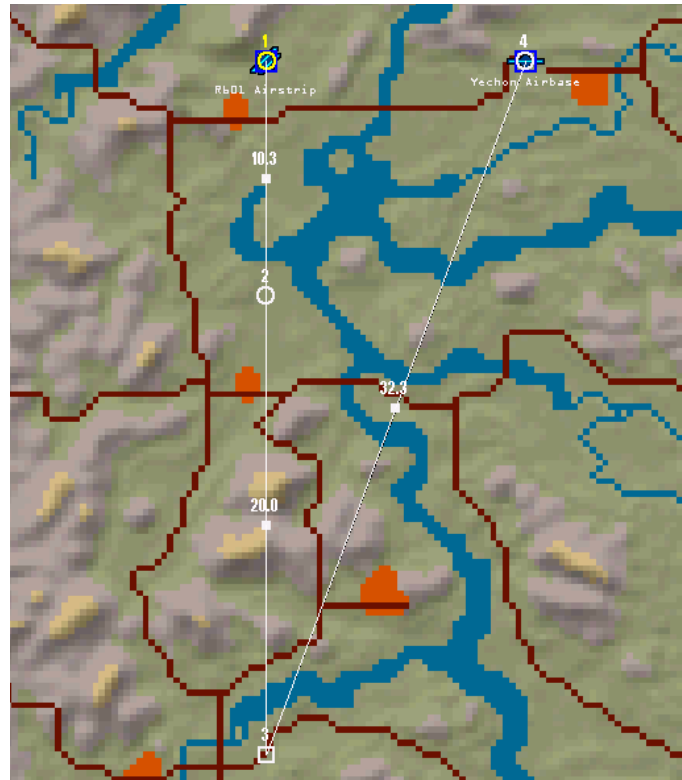
Human Package (AC type, package numbers)	4x F16C-52 4x F16C-52	Package 1027 Package 3687
Mission Success Criteria	Successfully mark the airfield and fly over it on radial 270/090	
Mission Partial Success Criteria	As above	
Air to Air Weapon Load out (Free or Fixed)	Fixed	
Air to Ground Weapon Load out (Free or Fixed)	Fixed	
Mission Flight plan (Free or Fixed)	Fixed	

Package Information					
Takeoff time	Call sign	Task	Target	Package # ⁽¹⁾	AC # & type
09.00	Cowboy 1	Training	Stp 3	1027	4x F16C - 52
09.02	Falcon 1	Training	Stp 3	3687	4x F16C - 52
⁽¹⁾ Blue colour indicates for human use. Red colour indicates for AI only.					

Briefing Notes

The aim of this TE is to practice a procedure that allows you to mark Stp 1 (your airfield) then use the HSI to fly the westerly 10 mile DME arc before flying into the airfield on the 270/090 radial. The procedure below will tell you how to carry this out correctly. Note you can use Shift-P to freeze the game during the approach from Stp 3 to Stp 2 if the students are struggling to mark the airport in the time available.

1. Once in the cockpit **turn on the ACMI** then take-off and fly direct to Stp 3 at Angles 10. Students should be in trail formation, approximately 2 miles apart.
2. As each pilot arrives at Stp 3 (and not before) they should turn around and reference Stp 2, keeping their speed below 400 knots to give them enough time to carry out the actions detailed below. The following map shows how the Steerpoints are arranged.



3. Once on course for Stp 2 select Stp 1, select AG mode (CCRP) then put the ICP into mark mode (press 7 on the ICP).
4. Move the radar cursors over Stp 1 or press OBS 10 (lowest button on the right) while on the GM page to move them over automatically (see picture).



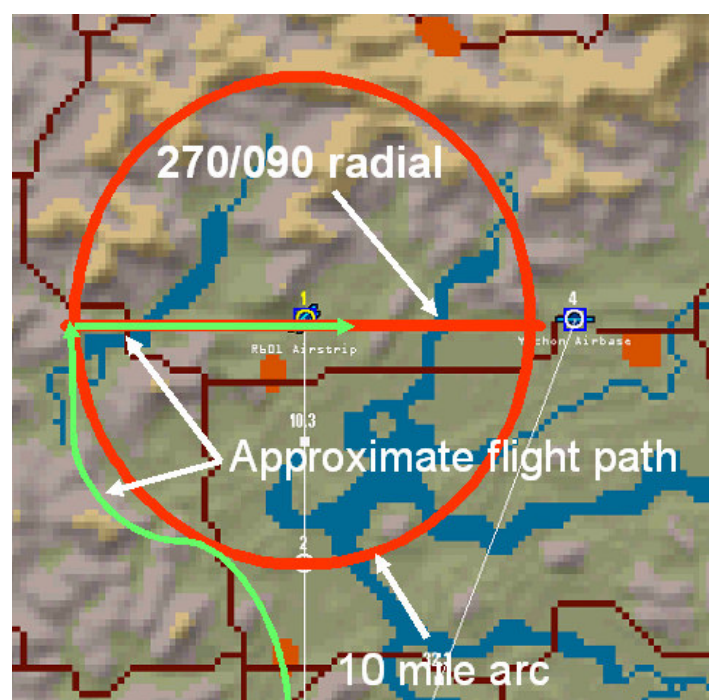
5. Once the cursor keys are over Stp 1 press the enter key on the ICP to mark this position. You will see a magenta cross on the HSD if this is done correctly (see picture). You can move through mark points using the normal Stp forwards and backwards keys if required (default S and Shift-S).



6. Turn off mark mode by pressing the DCS Return on the ICP then reference Stp 2.

7. Set the HSI course to 090/270.

8. When you reach Stp 2 press 7 on the ICP turn the mark function back on. This links the HSI to your currently selected mark point and allows you to use the mark point and HSI in exactly the same way as you would use a TACAN station. Use the Stp select keys to select the mark you placed over Stp 1 (usually Mark No 1). The diagram below shows what your approximate flight path around the 10 mile arc and the 270/090 radial will look like.



9. Begin a left turn to place the HSI direction indication at your 3 o'clock position (see picture).



10. Stay on the 10 mile arc by adjusting the position of the triangle as required. Moving it to 12-3 o'clock moves you closer (decreasing the range) while putting it at 3-6 o'clock takes you further away from Stp 1 (increasing range).

11. Once you intercept the 270/090 radial (see picture) turn right.



11. Continue turning right until you are flying along the 270/090 radial, (see picture), the course indicator will now be pointing to the 12 o'clock position on the HSI. You are now flying directly towards the airfield.



12. Use visual means to ensure you are flying directly over the airfield on a heading of 090 (see picture).



12. Once everyone has flown over the airfield turn off the ACMI then exit.

13. Using the ACMI, assess all of the students to ensure they carried out the correct procedure. If anyone has failed to understand how to mark, fly an arc and turn to capture a radial then they will need to fly the TE again as they need to know this procedure in order to do the next TE.

14. Once done load up the next TE and put these techniques into use on a co-ordinated bombing run.

Co-ordinated Offset Bombing Runs.tac	
By Vosene	

Human Package (AC type, package numbers)	4x F16C-52 Package 1027 4x F16C-52 Package 3687
Mission Success Criteria	All flights over both targets with no more than 30 seconds separate between each flight
Mission Partial Success Criteria	All flights over both targets with no more than 45 seconds separate between each flight
Air to Air Weapon Load out (Free or Fixed)	Fixed
Air to Ground Weapon Load out (Free or Fixed)	Fixed
Mission Flight plan (Free or Fixed)	Fixed

Package Information					
Takeoff time	Call sign	Task	Target	Package # ⁽¹⁾	AC # & type
07:26	Camel 1	Tanker	N/A	3699	1x KC-10
07:28	Chalis 1	AWACS	N/A	3693	1x E-3
07:30	Sentry 1	JSTAR	N/A	3696	1x E-8C
08:50	Cowboy 1	Strike	Kuum-ni Airbase	1027	4x F16C – 52
08:52	Falcon 1	Strike	Kuum-ni Airbase	1027	4x F16C - 52
⁽¹⁾ Blue colour indicates for human use. Red colour indicates for AI only.					

Briefing Notes

This TE is designed to allow students to practice co-ordinated, offset bombing runs on an airbase, there is also a target of opportunity on the way home (1st Army Base), which you are free to engage in a co-ordinated attack but pilots will need to plan this themselves. Before undertaking this training all pilots should be competent in the use of the mark function and understand how to follow the HSI DME arc and how to intercept a specific radial using the HSI.

Target Allocation

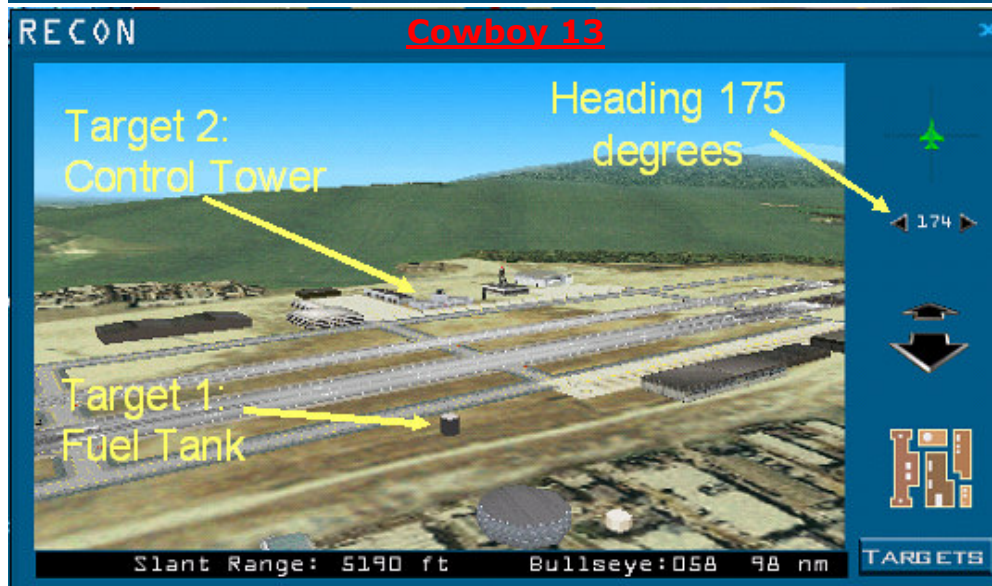
Cowboy Flight

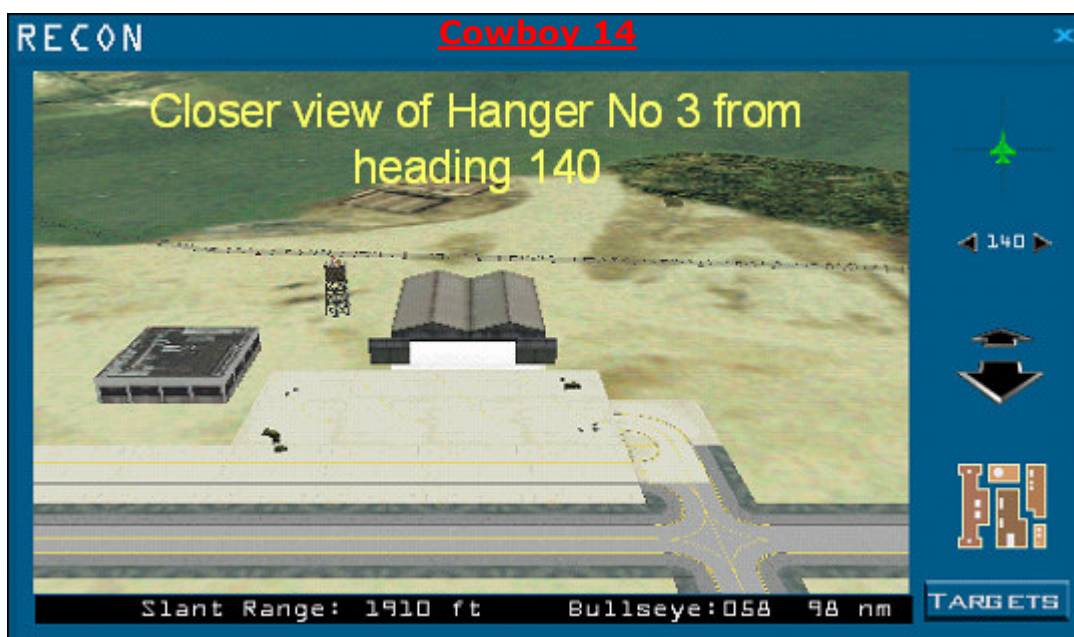
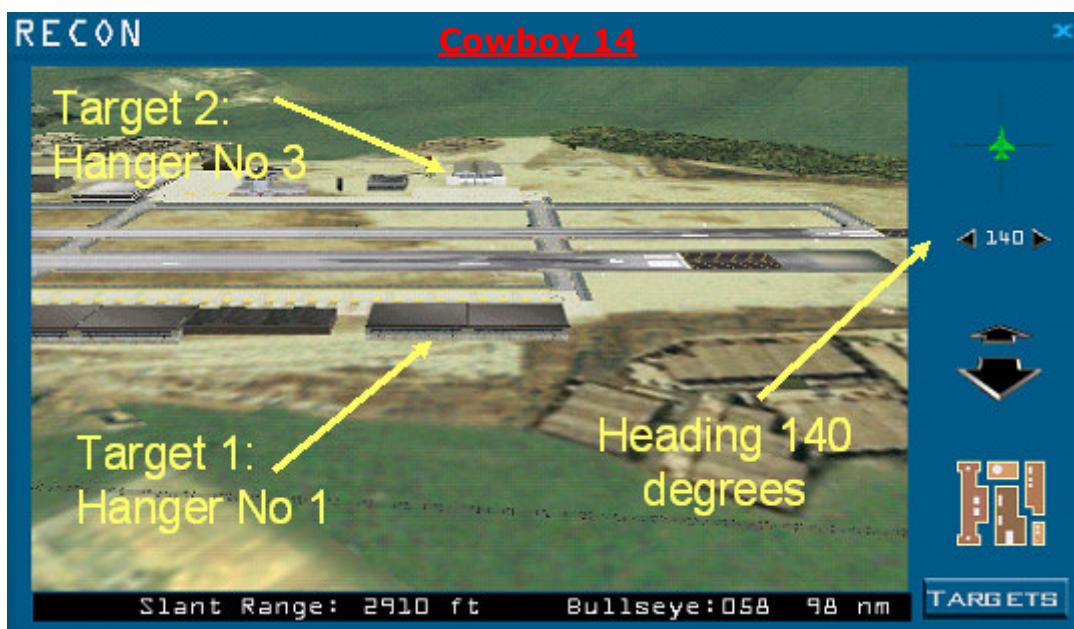
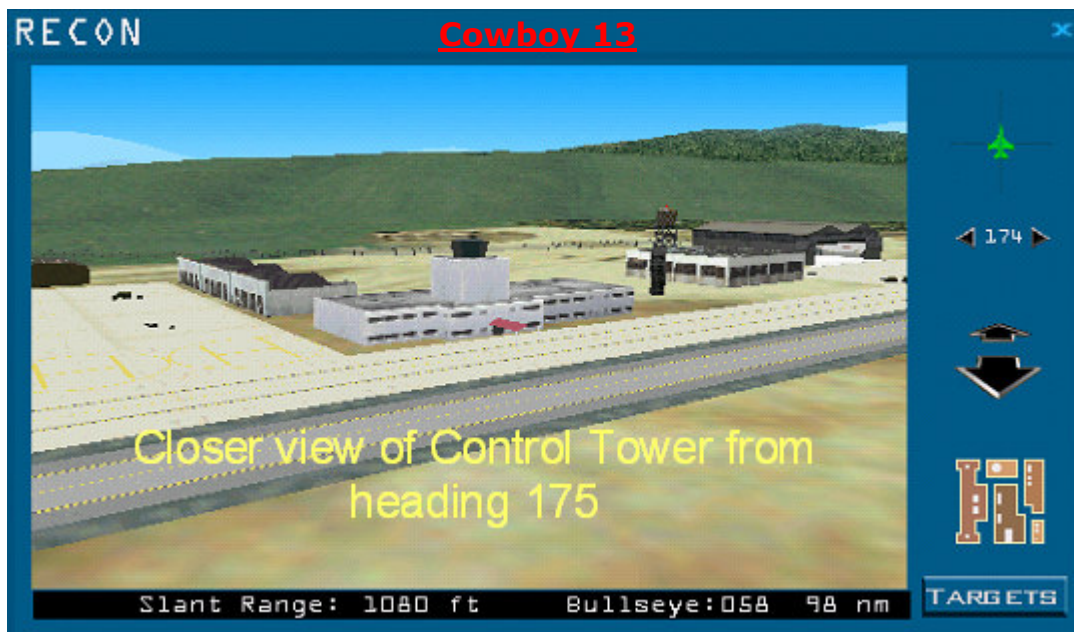
Ser	A/C	Target	Weapon	Altitude/Speed
1	Cowboy 11	Runway 23L	6x BLU-107 manual pickle down runway	500 ft 450 knots
2	Cowboy 12	Runway 05L	6x BLU-107 manual pickle down runway	1000 ft 450 knots
3	Cowboy 13	Fuel Tank and Control Tower	1x Pair BSU-49s on each target	750 ft 450 knots
4	Cowboy 14	Hanger No's 1 & 3	1x Pair BSU-49s on each target	1250 ft 450 knots

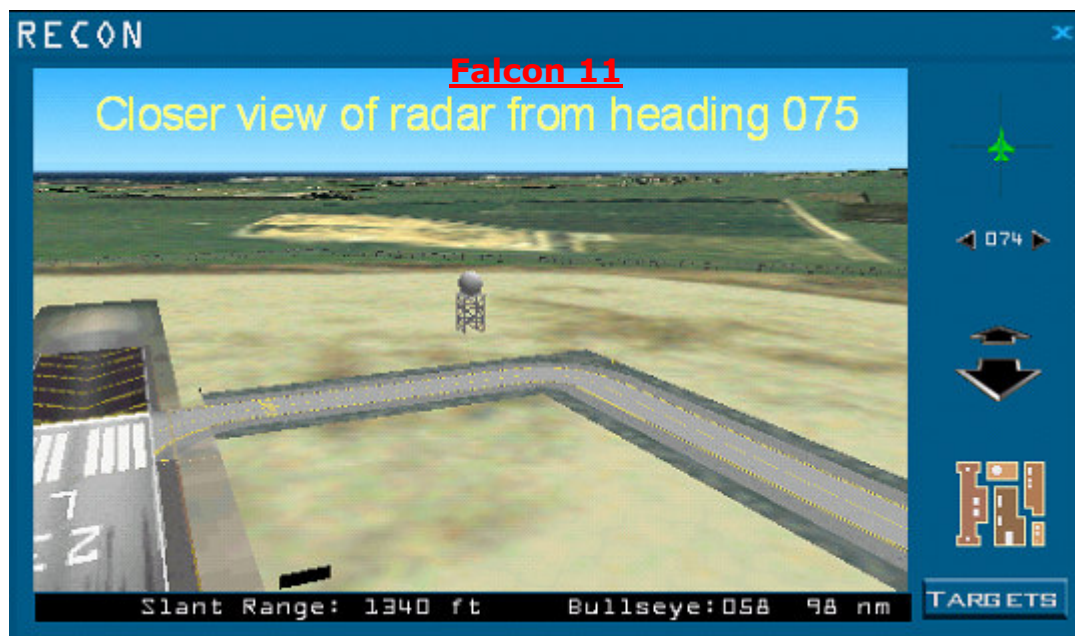
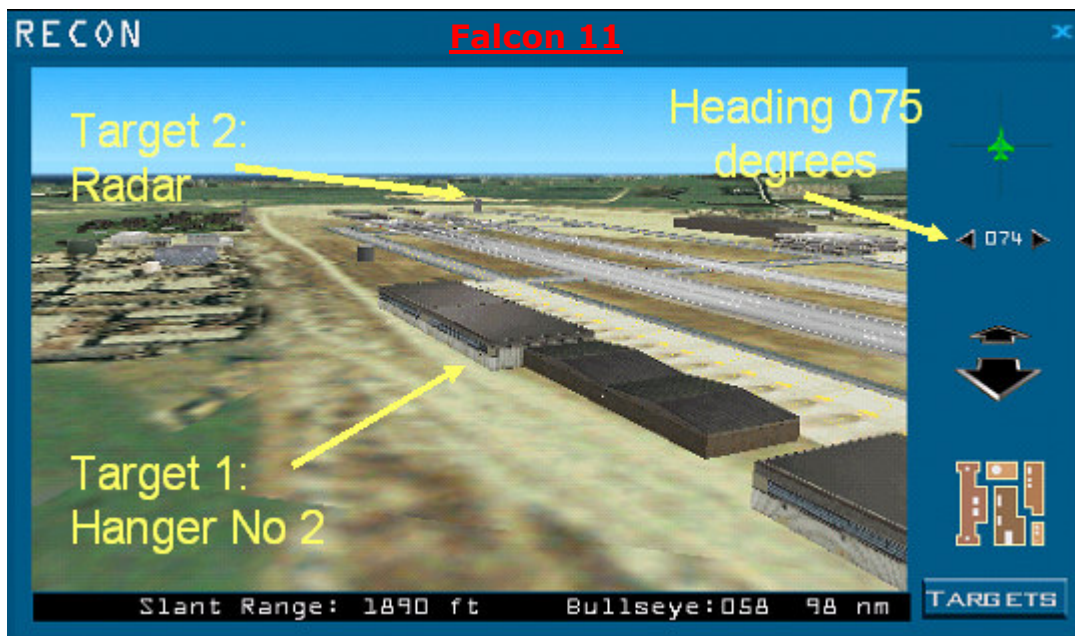
Falcon Flight

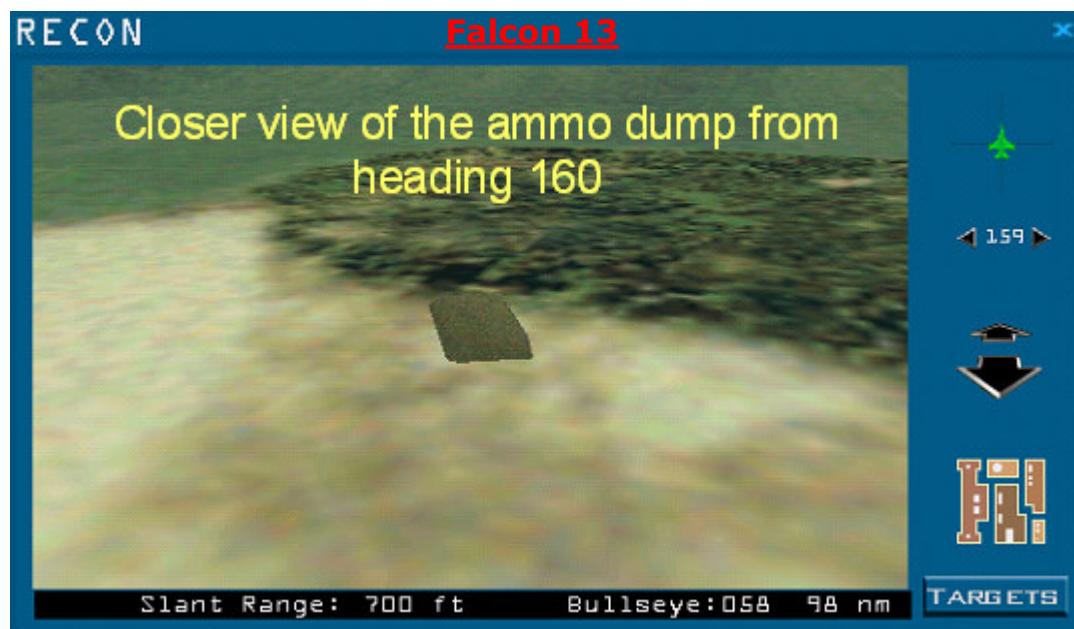
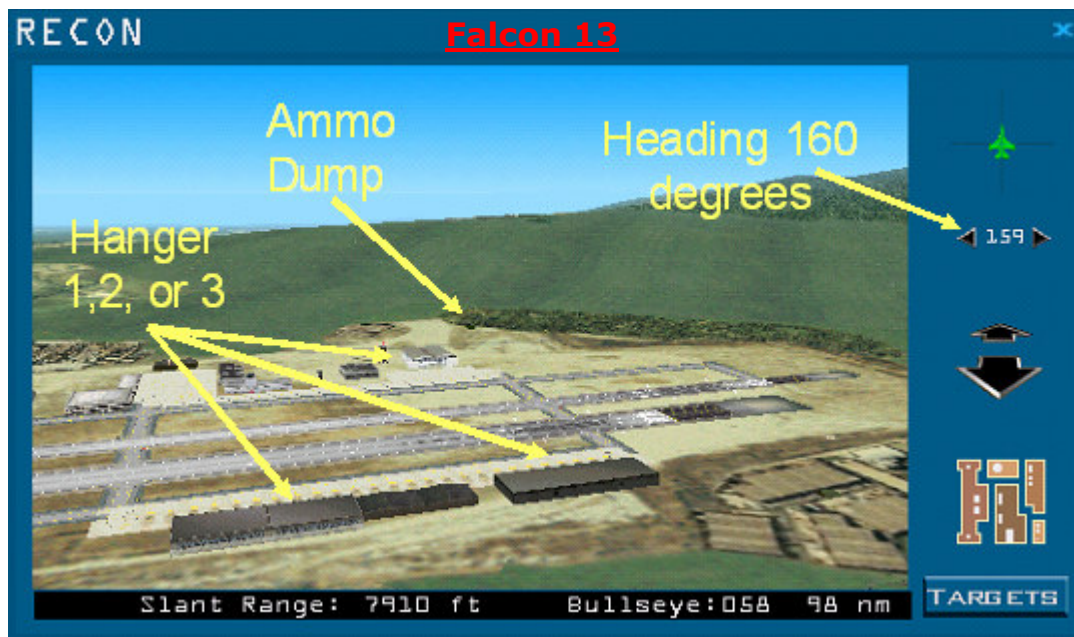
Ser	A/C	Target	Weapon	Altitude
1	Falcon 11	Hanger No 2 and Radar	6x BLU-107 manual pickle down runway	500 ft 450 knots
2	Falcon 12	Runway 05R	6x BLU-107 manual pickle down runway	1000 ft 450 knots
3	Falcon 13	Any hanger not destroyed & ammo dump	1x Pair BSU-49s on each target	750 ft 450 knots
4	Falcon 14	Runway 05L	6x BLU-107 manual pickle down runway	1250 ft 450 knots

Recon Photographs – Kuam-ni Airbase







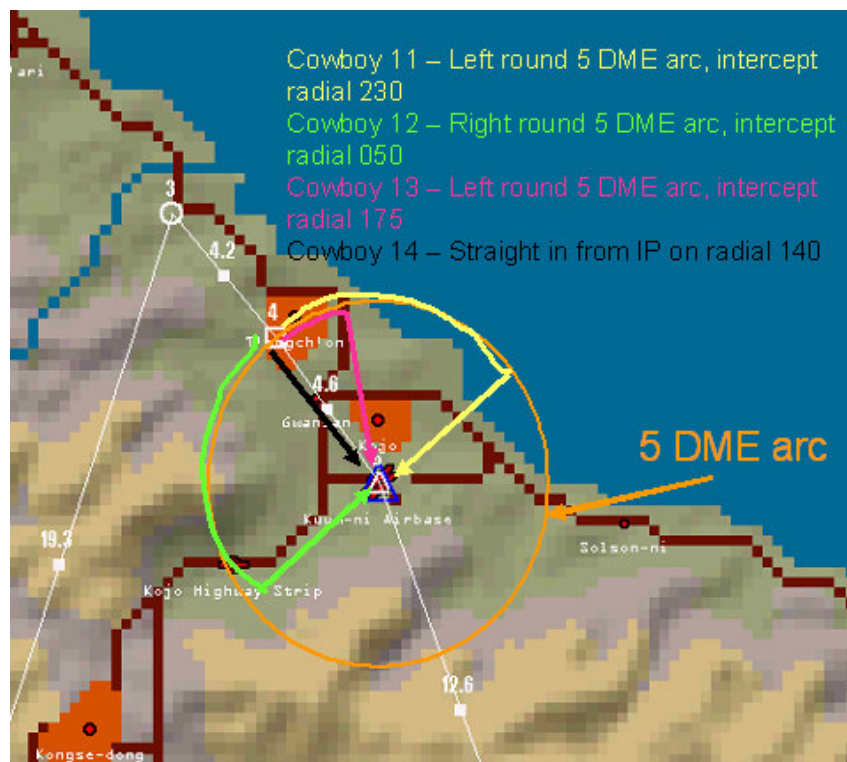


1. Load the mission.
2. Each pilot should review their part in the airfield attack and make a note of their final attack heading. They will be required to input this into their HSI as their intercept radial.
3. Flight leads should also discuss formations for each attack as aircraft will have different distances to fly from the IP to the target. Some elements will also need to maintain an airspeed approximately 50 knots above caret until they reach the IP, due to the extra distance travelled around the DME arc.
4. Remember communication and maintaining the correct airspeed/position are key to arriving at the correct time. Leads must let everyone know their distance to the IP/target so that others can ensure they arrive at the right time. Suggested formations for the airfield attack in order to account for different distances travelled around the DME arc are:

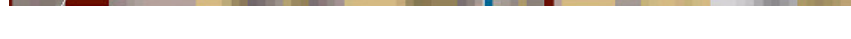
Ser	A/C	Formation at IP	Remarks
1	Cowboy 11	Spread with 2	Maintain 450 knots throughout
2	Cowboy 12	Spread with 1	Maintain 450 knots but must adjust to arrive on target at same time as Lead
3	Cowboy 13	6-8 miles trail behind Cowboy 11	Adjust speed/trail to arrive on target 30 seconds behind Cowboy 11 & 12
4	Cowboy 14	3 miles trail behind Cowboy 12	Adjust speed/trail to arrive on target at same time as Cowboy 13

Ser	A/C	Formation at IP	Remarks
1	Falcon 11	2-3 miles ahead of 2	Maintain 450 knots throughout
2	Falcon 12	2-3 miles trail behind 1	Maintain 450 knots but must adjust to arrive on target at same time as Lead
3	Falcon 13	5-8 miles ahead of 4	Adjust speed/trail to arrive on target 30 seconds behind Falcon 11 & 12
4	Falcon 14	5-8 miles trail behind 3	Adjust speed/trail to arrive on target at same time as Falcon 13

Cowboy Flight - Visual representation of attack directions at airfield.



100%



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confliction. It is also very important to stick to your assigned altitude during attacks to minimise the chance of a collision.

8. Once the flight is approximately 25-30 miles from the target, mark Stp 5.
9. Switch back to the Steerpoints and follow them till you reach the IP then switch to your mark and use the HSI arc and radial to follow the pre-designated attack pattern. Once again, the key role of element leads in providing info and co-ordinating the strike cannot be over emphasised.
10. After the airbase attack, RV the flight at Stp 6 then head South towards Stp 7. Mark Stp 8, remember to change the mark point using S and Shift S as with normal Steerpoints (once you are in mark mode).
11. Change back to normal steerpoints until you reach Stp 7 then change to Mark mode. Ensuring you have the Mark for Stp 8 selected, follow the HSI DME arc and intercept your designated attack radial.
11. Attack the 1st Army Base at Stp 8.
12. RV at Stp 9, turn off the ACMI and RTB.
13. Once you have landed, de-brief the students using the ACMI tape.