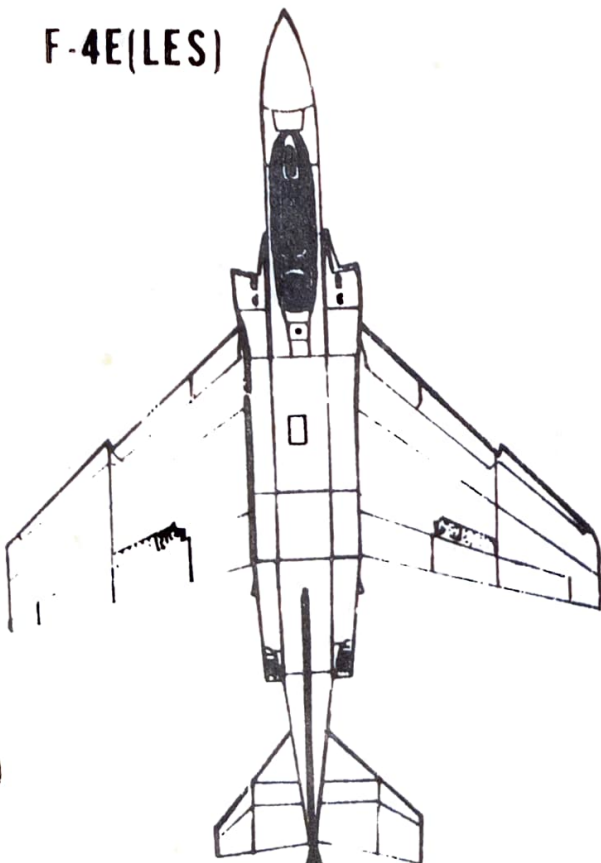




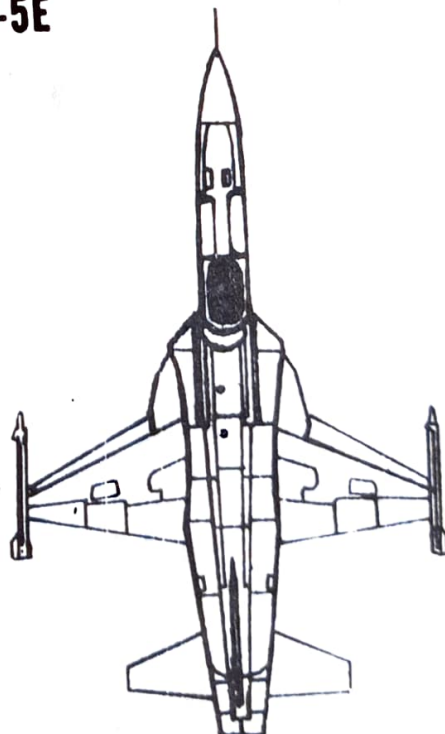
347 TFW DOW

NEW INFORMATION PAMPHLET #22 DISSIMILAR AIR COMBAT TRAINING

F-4E(LES)



F-5E



F-5'S VISIT MOODY

A detachment from the 65FWS will deploy to Moody AFB between 25 Jun and 6 Jul 1979 to provide us Dissimilar Air Combat Training. They will provide 108 aggressor sorties on a 4 turn 4 turn 4 daily schedule. The sorties will be evenly distributed between the three squadrons over the two week period. On 22 Jun the 347th will hold local ACBT academics with emphasis being placed on fighting the F-5. Capt Gary Robinson, a 414th FWS instructor, is scheduled to give this academic session.

Monday morning 25 Jun will be a down morning for the required F-5 inbriefings and academics. All aircrews are required to attend. Monday mornings schedule is as follows:

0630-0700 Detachment Commander/ROE Brief
0700-1000 Aggressor Academics

Following academics the aggressors will fly a 4 turn 4 schedule. The F-5 sorties lost on Monday will be made up on Tuesday and Wednesday.

IAW IMC 79-4 to TACR 51-2, all aircrews who have completed DACBT qualification training in the F-4 retain their DACT qualification as long as they are assigned to an F-4 unit. This effectively cuts down our initial DACBT upgrade training workload and allows us to concentrate these valuable F-5 training sorties on a fewer number of aircrews. Initial DACBT upgrade training requires 2 sorties; however, that is an absolute minimum. In order to reap maximum benefits from this program it would be better for 10 aircrews to receive 4 F-5 sorties each than for 20 aircrews to receive 2 sorties each. Aircrews not receiving aggressor training on this cycle would be primary players on the next aggressor visit.

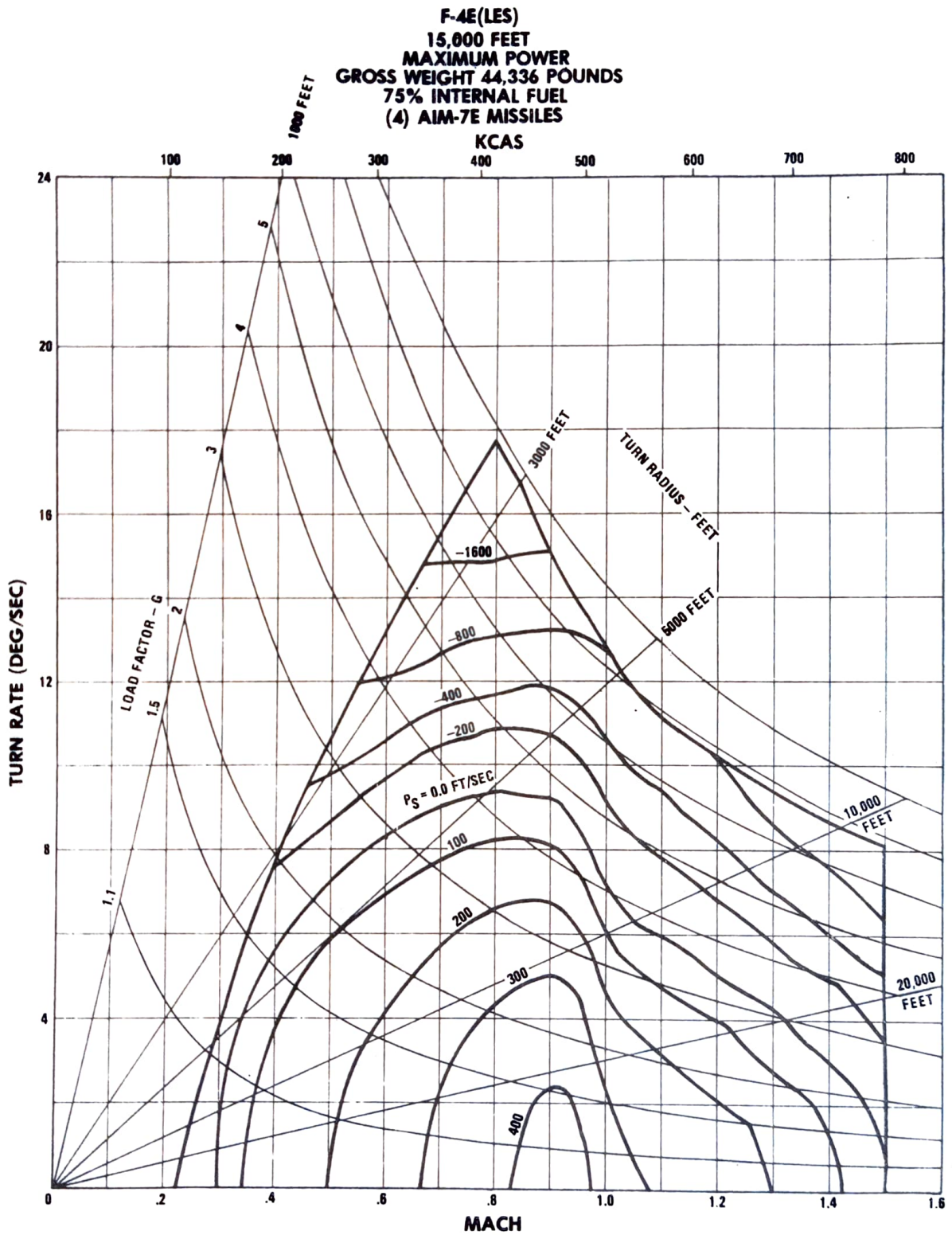
Because we are receiving a limited number of F-5 sorties, every mission must be tailored to maximize training. A training philosophy that emphasizes visual exposure, rather than advanced tactics, should be stressed. Likewise it must be stressed that these sorties should not be used to teach basic BFM/ACM skills and concepts. They should be used to emphasize the techniques and maneuvers needed to effectively engage and destroy a dissimilar performing adversary. In order to do this each aircrew must be thoroughly prepared for each and every mission. The bottom line is your personal preparation is the key to your success in the skies.

C. Performance Comparison:

	F-4E (Clean)	F-4E (Tanked)	F-5E
Combat Gross Wt.:	44,500	-	14,600
Lenght/Wing Span:	63/38	-	48/27
Thrust/Weight: .8 IMN/15,000'	.71	-	.57
Max. Allowable G:			
Clean	6.5 (.72 IMN)	-	7.3
Tanked	-	6.0	-
Corner Velocity:			
Clean	380	-	380
Tanked	-	360	
Quickest/Tightest Turn: (15,000')			
Rate	15°/sec	14.8°/sec	17.3°/sec
Radius	2900'	2900'	2000'
Energy Loss	-1900FPS	-1800FPS	-1200FPS
Sustained Turn:			
Speed	420	-	325
G	4.5	-	3.5
Rate	9.3	-	9.3
Visibility:			
6 O'clock	Fair (2 people)		Poor
12 O'clock	Fair		Good
Armament:	All Aspect		Rear Only
Nose Authority	Heavy		Light
RWR:	Yes		No
Engine Smoke:	Yes		No
Color:	Dark		Varied
Pilot Proficiency:	Limited		Excellent

When using the charts for aircraft comparison, remember aircraft configuration and gross weight will affect how the chart looks.

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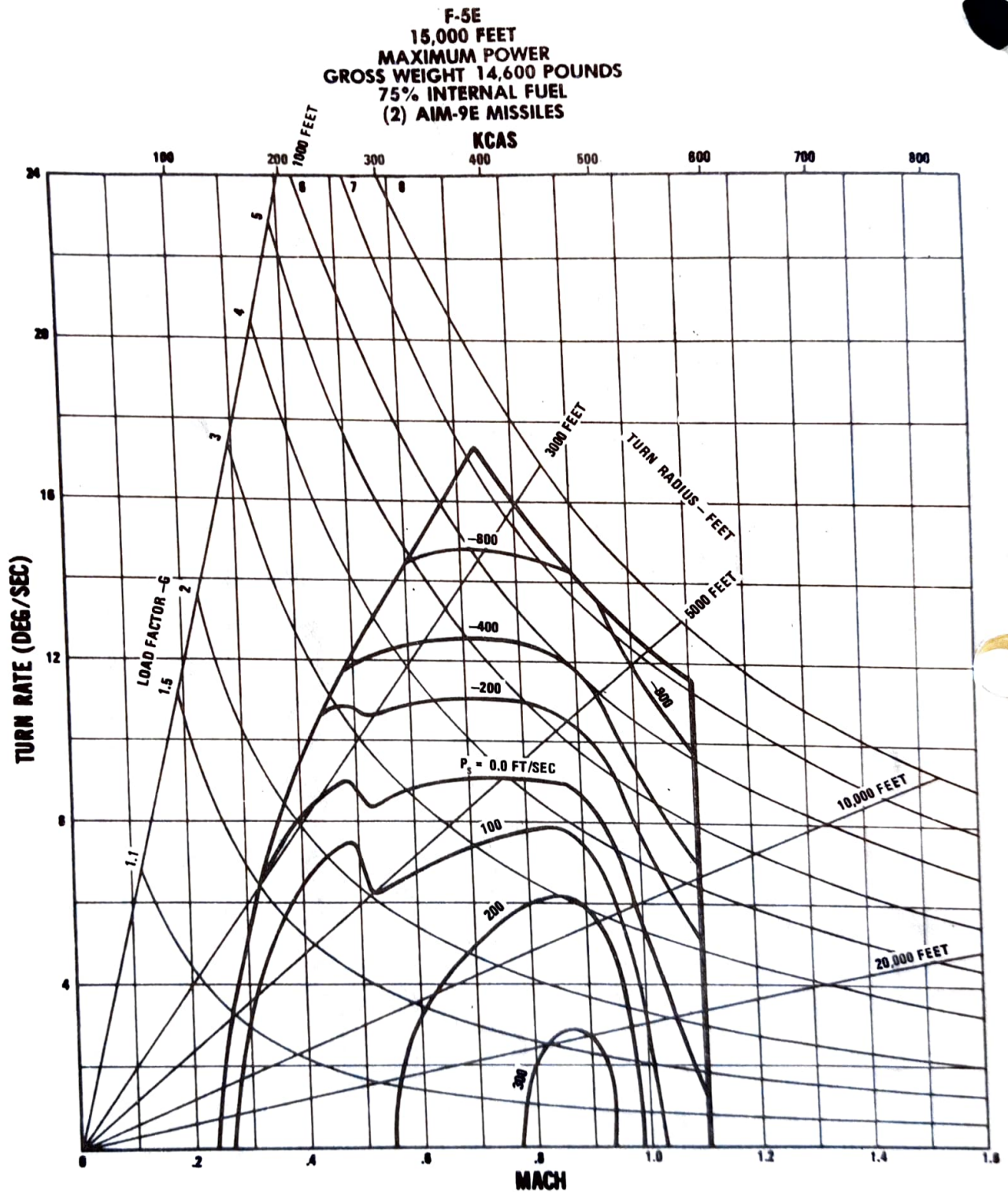


F-4E (LES) Rate-Radius Diagram

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The Man and
As previous
training is



F-5E Rate-Radius Diagram

UNCLASSIFIED

The Man and His Machine

As previously mentioned, thorough ground preparation prior to flying training is essential. You must know the enemies aircraft and its capabilities to maximize kills. Likewise you must have some insight as to how the pilot of that aircraft is trained and how he intends to fight in combat. Aggressor academics will answer many of the questions you may have about fighting Communist Block aircraft; however, clues still need to be presented on fighting the F-5. The rest of this discussion will center around the F-5, his characteristics, how you should expect him to perform and how you can fight him.

The primary consideration is the fact that the man you are fighting is an EXPERT pilot in the air to air arena. If given the opportunity to maneuver unrestricted he will make few mistakes and prove to be a worthy adversary. He knows very well his aircrafts capabilities and will capitalize on the advantages he may have over his opponent every chance he gets.

As you know, the F-5 is a tiny aircraft compared to what your eyes are accustomed to seeing.

If you use the same visual perceptions for range estimations as you use for the F-4, the F-5 will most likely be at a much closer range and ultimately more of a threat than you think. A further complication is the fact that the man will often put his nose on you (pure pursuit) to further enhance the visual acquisition/range estimation problem you already have.

There are, however, aids that will provide quicker visual acquisition and deny him tally-ho. If you know the camouflage scheme of the F-5 you're fighting, put him between you and a background that will provide a contrast and a planform view. Likewise to deny him a tally-ho blend your camouflage in with a suitable background, use the sun, altitude splits, afterburner and nose on intercepts. The wingtip mounted AIM-9's on the F-5 often aid in visual acquisition and identification also. Once a tally-ho is obtained do not purposely perform maneuvers that will lose sight. Reacquisition after losing sight is extremely difficult at best. It is also often possible, when fighting 2V1, to visually acquire the F-5 with reference to your wingman. He's usually at your wingy's 12 o'clock, right!!

Because of his small frontal area, radar contacts usually occur at shorter ranges. It is extremely important that radars be peaked up and tactics devised to handle the short range contact and committal. Remember a long range contact on a planform view of an F-5 will often disappear when he turns away or into you.

Slowing below 350 knots to fight the F-5 is often suicidal if you don't kill quickly. He has the definite nose positioning advantage over us at slow speed and his acceleration capability is very much equal. If you don't have a wingman who can come in and help you in the slow speed fight you are in trouble. (Remember even if you do have a wingman you can't trust him.) Don't intentionally do a maneuver that will get you in trouble unless you're about to die anyway. When the F-5 fights counter offensively he'll often perform high G "bat turns" to create angle and closure control problems for you. You must realize that these "bat turns" extract a great deal of airspeed and his follow-on maneuvers are somewhat limited. His favorite trick after getting you to overshoot will be to point his nose at you and intimidate you to death. Again, resist the intimidation and your tendency to slow down and knife fight with him. When you effectively maintain your offensive posture you can expect the F-5 to use his superior nose positioning authority and start taking the fight up vertically. He is very adept at fighting in this arena and is trying to make you bury your nose if he goes low or decelerate if he goes high. Fight the tendency to bury the nose in a split S maneuver to go after him. The nose will bury itself enough without you helping. Also fight the tendency to go extremely nose high chasing him since your deceleration puts you in the arena where his maneuvering flaps once again give him the nose positioning advantage.

Although the previous discussion seems to give the F-5 the awesome advantage that is not the case at all. A well flown F-4 is at least an equal adversary and indeed holds some advantages. First of all we have 2 sets of eyeballs--a fantastic advantage in multi-plane engagements. We also have an ordinance advantage in that we have the AIM-7 capability. The F-5, like the F-4, has a very long nose hampering low forward visibility but, unlike the F-4, he also has very restricted aft visibility. The dorsal bulkhead will often cause the F-5 to, if he has no-tally-ho, do hard check-six turns that deplete airspeed and destroy BFM potential. They also divert his attention from 12 o'clock threats. If you intentionally do maneuvers that put you in his deep-six blindcone, he will either lose sight or turn hard to maintain sight, once again depleting energy.

Mission Preparation and Briefing

Thoroughly plan your mission and scenario objectives prior to brief time. If you're the DACT IP or FL you are encouraged to get with the aggressor before hand and tell him exactly what you want him to do in each engagement. This will allow you to talk with the aggressor about the scenario objectives and while airborne, force the AC to make judgements as to what the aggressor is doing to him without prior knowledge gained in the briefing. DO NOT plan on the aggressor briefing the mission. He doesn't know your specific needs or exactly what you want.

As you brief the mission spend a minimum amount of time on "standard" items. The aggressor is not here to listen to F-4 EP's, min and emergency safe altitudes etc. He is here for our training so spend a lot of time on the

"how" portion of the briefing. If you're confused on some aspect of air to air ask the aggressor for some expert advise as he indeed is an expert.

Items that must be covered are the ROE, how you're going to set up and start engagements, start engagement airspeeds and altitudes, how to maneuver after the KIO, area boundaries and rendezvous points and the alternate mission.

Scenarios

The following scenarios are provided for your consideration. They are by no means hard and fast but on the other hand are developed using the guidelines established in TACR 51-2 and the "building block" approach. The intercepts in the scenarios were included so WSO's could get some realistic intercept training on small targets and AC's can get practice gaining tally-ho. If intercept training is not desired and the tanks are still feeding, other training within the visual arena is definitely encouraged.

DBFM-1 (1V1) OFFENSIVE MANEUVERING

OBJECTIVES:

1. Practice offensive and counter offensive visual ranging exercises.
2. Practice guns tracking a dissimilar adversary.
3. Using radar, detect a small aircraft beyond visual range and convert to a position of advantage with a tally-ho.
4. Practice high deflection gun shots enroute to separations/repositions.
5. Starting from a position of advantage recognize the need to employ the proper maneuvers/ordnance to achieve a kill on the adversary. If unable to kill the adversary, reposition to maintain the offensive or separate.

CONDUCT OF MISSION

1. System Check: Emphasize stadiometric ranging and stab-out radar crew coordination.
2. Visual Ranging: Emphasize offensive ranging on this ride using all means available (aggressor, radar, stadiometric ranging).
3. CINE Track: Practice guns tracking the F-5 paying particular attention to his size and your range estimation, closure control, aircraft positioning and the gun KILL.
4. Tactical Intercept: If tanks are not dry split up for approximately a 25 NM 180° intercept. Note the range at which you obtain the first radar contact. Attempt to convert unobserved with the first tally-ho.
5. Stab-aug/Rig Check: When tanks go dry.
6. High Angle Gun Shots: From a 7000' AIM-9 shot, perform a high angle gun shot. Either reposition or separate. Do one of each in any order. Analyze the separation carefully in debrief. During the reposition watch the F-5's nose authority.
7. Perch Setups: From an 8-12000 ft. perch position attack the F-5 and employ all ordnance and maneuvers available/needed to kill him. Control the F-5's defense somewhat at first but as your offensive maneuvering improves relax the restrictions. Remove all restrictions on the last one if you're ready. Subsequent attacks should start from various aspects. Things to remember: THINK KILL but don't attack until you're ready i.e., altitude, position, airspeed, and area orientation. Don't pass up weapons parameters trying to sweeten up a shot. If you cannot kill the F-5 either reposition to maintain the offensive or separate out of the flight. A successful separation at Joker fuel should be attempted but don't tell the aggressor you're Joker, he'll cheat.
8. During recovery perform roll-slide gun attacks or ranging exercises.

DBFM-2 (1V1) COUNTER-OFFENSIVE MANEUVERING

OBJECTIVES:

1. Counter offensive visual ranging exercises.
2. Practice guns tracking a dissimilar adversary.
3. Using radar, detect an aircraft beyond visual range and, while converting to a position of advantage, gain a tally-ho.
4. From a position of disadvantage (F-5 behind you) negate the attack and convert to the offensive and kill, stagnate the adversary or separate from the adversary.

CONDUCT OF MISSION:

1. Systems Check: As in DBFM-1.
2. Visual ranging: Have F-5 perform counter offensive ranging exercises on you varying aspect and range. Watch him disappear!! Have him call out ranges over the radio in 1000' increments if desired.
3. CINE Track: As in DBFM-1.
4. Tactical Intercepts: As in DBFM-1.
5. Stab-aug/Rig Check: When tanks are dry.
6. Counter-Offensive Setups: Use canned setups for multiple engagements. Have the F-5 initiate the engagement with a directive radio call appropriate for the range and angle off from which he is initiating the attack. After the initial call you're on your own. F-5 attacks should vary in aspect (30 - 60°) and range (3 - 12,000 ft.). Things to remember: Tell the F-5 when you're ready to play, i.e., altitude, airspeed and area orientation. You must also remember that there is no magic maneuver that will move the bandit from your 6 o'clock to your 12 o'clock. You may have to work like hell just to stay alive!! In order to do anything good counter offensively you must assess the bandits range, angle off and nose position, determine his intentions and then counter his intentions. You absolutely must be aggressive and that means whether the AC has a tally-ho or is blind. Often the WSO is the only one with a tally-ho and he must aggressively direct the fight. If he doesn't he's responsible for both deaths. Try to separate at Joker fuel.
7. Perform roll slide gun attacks or ranging exercises during recovery.

DACM-1 (2V1) OFFENSIVE MANEUVERING

OBJECTIVES:

1. Ranging exercises.
2. Using radar, detect an adversary beyond visual range and maneuver the flight to a position of advantage at the tally-ho.
3. Practice the fluid attack system from a canned perch setup.
4. Obtain a flight kill on the bandit.
5. Sustain no flight losses to the bandit.

CONDUCT OF MISSION

1. Thorough systems check on the bandit.
2. Tactical formation to the area with bandit doing ranging exercises on the element. Have him vary aspect and range.
3. Setup and run tactical intercepts until tanks are burned dry. Split the bandit off and when approximately 25-30 NM separation between fighters and bandit exists, aircraft will be turned towards each other and fighters will run a tactical intercept. Emphasis will be placed on radar detection, intercept commentary, geometry control, role establishment, shooter positioning, position of flight at tally-ho and the shooters conversion turn. Bandit will be allowed to make one 180° turn. After his 180° turn KIO and setup another one, or proceed to something else. Remember to brief no contact or only one contact contingencies.
4. Stab-aug/Rig Check: After tanks are dry.
5. Perch Setups: Put bandit at 15,000' and approximately 400 KTS. Put engaged fighter 9-12,000 ft. in trail and at approximately 450 KTS. Free fighter is 30°-60° off leaders wing at 6-12,000 ft. and high or low. Bandit maneuvers when and to the severity as briefed by the flight lead. Consider the experience of the flight when deciding how to control the bandit. As proficiency increases subsequent engagements should allow the bandit to more freely maneuver. The purpose of the engaged fighter is to KILL or at least keep the bandit predictable until the free fighter has achieved a supporting position or can himself apply pressure and kill the bandit. The engaged fighter must perform good offensive BFM and the free fighter must use good split plane maneuvering to maintain/gain the position of mutual support and kill the bandit. If properly flown the fluid attack system should lead to the switching of roles in the course of the engagement. Once the free fighter has switched roles or obtained a rear-hemisphere shot KIO and start again. The hardest part of the fluid attack system is getting the free fighter an entrance into the fight so emphasis must be placed on that aspect of the mission. On subsequent engagements switch the initial engaged role so each gets practice entering the fight as the free fighter.
6. RTB doing sequential role slide gun attacks or ranging exercises.

DACM-2 (2V1) COUNTER OFFENSIVE MANEUVERING

OBJECTIVES:

1. Ranging exercises.
2. Using radar, detect a bandit BVR and maneuver the flight to a position of advantage at the tally-ho.
3. Develop good visual lookout techniques and acquire the bandit prior to valid launch parameters.
4. Negate the bandits initial attack and convert the disadvantage to a sandwich, an offensive advantage or a combat separation.

CONDUCT OF MISSION:

1. Systems Check: As in DACM-1.
2. Ranging exercise: As in DACM-1.
3. Tactical Intercepts: As in DACM-1.
4. Stab-aug/Rig Check: When tanks are dry.
5. Setups: Fighters should setup a cap in an altitude block at patrol airspeed (400-450 KCAS) using random comm-out turns. Bandit will be cleared to attack from the rear-hemisphere when the element is ready to play. Bandit will vary the profile as briefed by the flight lead. His options are to attack one and not switch, attack one and switch one time or perform multiple switches. Fighters must visually detect and negate the attack. Maneuvering should commence at the atoll call if no one has seen the bandit or, if detected by a flight member, at 9000 ft. range. Fighters should split plane maneuver to effect a quick kill or a combat separation with mutual support. Don't both of you get slow and muck around with him. Remember your good offensive and defensive 1V1 BFM.
6. RTB doing sequential roll slide gun attacks or ranging exercises.