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Subj: F-35B TRAINING AND READINESS MANUAL

Ref: (a) NAVMC 3500.14C

Encl: (1) F-35B T&R Manual

1. Purpose. In accordance with reference (a), enclosure (1) contains revised standards and regulations regarding the training of F-35B aircrew in the Core Introduction Phase of training.

2. Cancellation. NAVMC 3500.111

3. Scope. Highlights of major Training and Readiness (T&R) planning considerations included in this F-35B T&R Manual are as follows:

a. The mission statement changed to reflect the Fleet Replacement Squadron (FRS) mission.

b. The Table of Organization was updated to properly reflect the FRS configuration only.

c. The Time-To-Train table has been updated with additional syllabi and expected Time-To-Train metrics.

d. All Lockheed Martin event codes have been removed.

e. The Low Altitude Tactics stage was removed and replaced with Non-Sanctuary tactics.


f. The Carrier Qualification stage was removed and shifted to operational squadrons. Field Carrier Landing Practice remains.

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distribution is unlimited.

4. Information. Recommended changes to this Manual should be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General (CG), Training and Education Command (TECOM), Marine Air Ground Task Force Training and Education Standards Division (C 466), Aviation Standards Branch using standard Naval correspondence or the Automated Message Handling System plain language address: CG TECOM MTESD.

5. Command. This Manual is applicable to the Marine Corps Total Force.

6. Certification. Reviewed and approved this date.


J. W. LUKEMAN
By direction

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CHAPTER 1

F-35B TRAINING AND READINESS UNIT REQUIREMENTS

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CHAPTER 1

F-35B VMFAT UNIT

1.0 TRAINING AND READINESS REQUIREMENTS. The Marine Aviation Training and Readiness (T&R) Program provides the Marine Air-Ground Task Force (MAGTF) commander with an Aviation Combat Element (ACE) capable of executing the six functions of Marine Aviation. The T&R Program is the fundamental tool used by commanders to construct, attain, and maintain effective training programs. The standards established in this program are validated by subject matter experts to maximize combat capabilities for assigned mission essential tasks (METs) while conserving resources. These standards describe and define unit capabilities and requirements necessary to maintain proficiency in mission skills and combat leadership. Training events are based on specific requirements and performance standards to ensure a common base of training and depth of combat capability.

1.1 MISSION. Conduct combat capable network enabled fighter/attack training across the full spectrum of combat operations for selected aircrew.

1.2 TABLE OF ORGANIZATION (T/O). Refer to Table of Organization managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for F-35B FRS units. As of this publication date, F-35B FRS units are authorized 20 F-35B Air Vehicles and 25 Instructor Pilots.

1.3 SIX FUNCTIONS OF MARINE AVIATION

SIX FUNCTIONS OF MARINE AVIATION		
FUNCTION	ABBREVIATION	DESCRIPTION
Offensive Air Support	OAS	OAS involves air operations that are conducted against enemy installations, facilities, and personnel in order to directly assist in the attainment of MAGTF objectives by destroying enemy resources or isolating enemy military forces. Its primary support of the war fighting functions is to provide fires and force protection through CAS and DAS.
Assault Support	ASPT	ASPT contributes to the war fighting functions of maneuver and logistics. Maneuver warfare demands rapid, flexible maneuverability to achieve a decision. Assault support uses aircraft to provide tactical mobility and logistic support to the MAGTF for the movement of high priority personnel and cargo within the immediate area of operations (or the evacuation of personnel and cargo).
Anti-Air Warfare	AAW	AAW is the actions used to destroy or reduce the enemy air and missile threat to an acceptable level. The primary purpose of AAW is to gain and maintain whatever degree of air superiority is required; this permits the conduct of operations without prohibitive interference by opposing air and missile forces. The other purpose of AAW is force protection.
Electronic Warfare	EW	EW is any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. EW supports the war fighting functions of fires, command and control, and intelligence through the three major subdivisions: electronic attack, electronic protection, and electronic warfare support.
Control of Aircraft & Missiles	CoA&M	CoA&M supports the war fighting function of Command and Control. The ACE commander maintains centralized command, while control is decentralized and executed through the Marine Air Command and Control System (MACCS). CoA&M integrates the other five functions of Marine Aviation by providing the commander with the ability to exercise Command and Control authority over Marine Aviation assets.
Aerial Reconnaissance	AerRec	AerRec employs visual observation and/or sensors in aerial vehicles to acquire intelligence information. It supports the intelligence war fighting function and is employed tactically, operationally, and strategically. The three types of air reconnaissance are visual, multi-sensor imagery, and electronic.

1.4 UNIT EXTERNAL SYLLABUS RESOURCE REQUIREMENTS. This table specifies external critical training resources required to achieve T&R requirements (e.g., ranges, adversary support, tanker support, etc.). Objectively defining and identifying aviation training resource requirements will assist operational and HQ agencies in defining required aviation training resources. Communities may tailor the format of this section to meet their requirements.

Category	Abbreviation	Name	Description	Notes
AIRSPACE	MOA	Special Use Airspace or MOA	Per Flight Information Publications.	
AIRSPACE	RSTD	Restricted / Warning Area	Per Flight Information Publications.	
AIRSPACE	MTR	Military Training Route	Per Flight Information Publications.	
AIRSPACE/RANGE SUPPORT	AA	Air-to-Air	Any airspace that can support beyond visual range tactical intercepts. May include Restricted Airspace, MOAs or Warning Areas.	Min range width of 40nm is usually required for AA.
AIRSPACE/RANGE SUPPORT	ACM	Air Combat Maneuvering	Supports training for within visual range air-to-air combat where dynamic maneuvering and simulated weapons employment by high performance aircraft will be executed.	
AIRSPACE/RANGE SUPPORT	TACTS	Tactical Air Combat Training System (TACTS)	TACTS range capable. A sophisticated airspace tracking and display instrumentation systems used primarily in ACM and threat WEZ recognition. All maneuvers are displayed real-time for a squadron Range Training Officer (RTO). All data is recorded to allow the aircrew to conduct post-mission analysis or "debriefs".	TACTS usually include ACM, NDDBS, EW, NDWS, ARM, capabilities. Implies RSTD Airspace.
AIRSPACE/RANGE SUPPORT	AA GUNS	Air-to-Air Gunnery	Any airspace that can support Air-to-Air Gunnery on a towed Banner. Implies Restricted Airspace or Warning Areas for example.	
AIRSPACE/RANGE SUPPORT	AA MISSILE	AA Missile Firing Range	Supports AA Missile Firing.	
AIRSPACE/RANGE SUPPORT	MACH 1+	Supersonic	Any airspace that can support Supersonic Flight.	
TRAINING SUPPORT	LINK	LINK 16	LINK 16 available.	
AIRSPACE/RANGE SUPPORT	EXP	Expendables Authorized	Supports use of Chaff & Flares.	
AIRSPACE/RANGE SUPPORT	AAR	Air to Air Refueling	Any airspace that can support aerial refueling .	
AIRSPACE/RANGE SUPPORT	RKD RNG	Raked Range	Concentric circle range, with WISS. LSR and RLSR a desired capability but must be specified. Night lighting capability implied.	
AIRSPACE/RANGE SUPPORT	WISS	Weapons Impact Scoring Set	Scores bombing to designated targets. Scores can be relayed via voice of fax.	Should be standard on a RKD RNG.
AIRSPACE/RANGE SUPPORT	STRAFE	Strafe Pit / Target	A scored Strafing Pit or Target.	Often located near a RKD RNG.
AIRSPACE/RANGE SUPPORT	TGT	Target	Any point- target that is authorized to release INERT weapons on.	May include an unscored Raked Range.

Category	Abbreviation	Name	Description	Notes
AIRSPACE/RANGE SUPPORT	LSR	Laser Safe Range	Supports Airborne Laser Firing.	
AIRSPACE/RANGE SUPPORT	JCAS	JCAS TTPs	Supports all three types of CAS in the range. Allows JTAC personnel on range. Implies LSR and either INERT or HE.	
AIRSPACE/RANGE SUPPORT	EW	Electronic Warfare	Threat Emitters providing a dynamic red/or gray force threat environment to enhance threat recognition, self-protection and defense suppression techniques.	
AIRSPACE/RANGE SUPPORT	Hi Fi EW	High Fidelity EW	Hi Fidelity (live) Emitters. Live actual SAM systems with operators. Can provide feedback via tape debrief.	Often a desired substitute for EW. May be cost prohibitive.
AIRSPACE/RANGE SUPPORT	HE	HE Impact Area	Supports live HE ordnance. Implies EXP.	
AIRSPACE/RANGE SUPPORT	LT INERT	Light Inert	Light Inert Impact Area.	MK-76 / LGTR / BDU-48 / Gun / Rockets
AIRSPACE/RANGE SUPPORT	HVY INERT	Heavy Inert	Heavy Inert Impact Area.	500lb and above.
AIRSPACE/RANGE SUPPORT	LGB	LGB Impact Area / Target	Supports LGB (HE or HVY INERT) release and Laser firing.	
AIRSPACE/RANGE SUPPORT	JDAM	JDAM Impact Area / Target	Supports JDAM release.	
AIRSPACE/RANGE SUPPORT	JSOW	JSOW Impact Area / Target	Supports JSOW release.	
AIRSPACE/RANGE SUPPORT	ICM	Improved Conventional Munitions	Supports ICM or Cluster munitions.	
AIRSPACE/RANGE SUPPORT	AS MISSILE	A/S Missile Firing Range	Supports AS Missile Firing.	LMAV / LGB / Hellfire / TOW
AIRSPACE/RANGE SUPPORT	ARM	Anti-Radiation Missile	Supports training to ARM delivery with simulated missile fly-out and kill indications.	
AIRSPACE/RANGE SUPPORT	ARM MISSILE	ARM Missile Firing Range	Supports ARM Missile Firing. Requires an EW emitter.	AGM-88
AIRSPACE/RANGE SUPPORT	URBN WPNS	Urban Weapons Impact Range	Urban CAS range capable of JCAS, LT INERT and LSR.	
AIRSPACE/RANGE SUPPORT	URBN TRG	Urban Training	Urban area with overlying Restricted or MOA training airspace. Does not imply authorized weapons release or Laser use.	Example is a town such as Yuma under the Dome MOA.
AIRSPACE/RANGE SUPPORT	SST	Smokey SAM Team	Smoke Rockets to simulate MANPADs or RF SAMs.	
AIRSPACE/RANGE SUPPORT	GWVS	Ground Warfare Visual Simulator	Provide enhanced battlefield realism via simulation of muzzle flashes for AAA and launch of SAMs.	
AIRSPACE/RANGE SUPPORT	IR TGT	IR Significant Target	IR Significant Target.	
AIRSPACE/RANGE SUPPORT	RDR TGT	Radar Significant Target	Radar Significant Target.	
AIRSPACE/RANGE SUPPORT	COMPLEX	Complex Target Array	Dispersed target array requiring sorting of targets and may include infrastructures such as runways, facilities, POL sites, etc. Implies INERT and LSR. WISS desired.	

Category	Abbreviation	Name	Description	Notes
AIRSPACE/RANGE SUPPORT	IMC	Instrumented Multi-Spectral Cues	Full size replicas of actual AAA and SAM systems, IR significant and normally linked to LSTSS and NDBS / WISS.	
AIRSPACE/RANGE SUPPORT	MOCK	Mock-up Targets	Full size replicas of Mechanized or Threat vehicles. IR significant desired. Weapons release not implied.	
AIRSPACE/RANGE SUPPORT	TGT-FORM	Tactical Targets in Formation	Full size actual or replicas of Mechanized or Threat vehicles. IR significant desired. Implies INERT and LSR. WISS desired.	
AIRSPACE/RANGE SUPPORT	TGT-DISP	Tactical Targets Dispersed	Full size actual or replicas of Mechanized or Threat vehicles. IR significant desired. Implies INERT and LSR. WISS desired.	
AIRSPACE/RANGE SUPPORT	TGT-MOVE	Tactical Targets Moving	Full size actual or replicas of Mechanized or Threat vehicles. IR significant desired. Implies LT INERT and LSR. WISS & LSTSS desired.	
AIRSPACE/RANGE SUPPORT	RECCE ARRAY	Actual Tactical Targets in an Array for PID	Full size actual Mechanized or Threat vehicles. Organized in an array in order to allow PID. Weapons release not implied.	
AIRSPACE/RANGE SUPPORT	STRUCTR	Structures	May include a building, bunker or revetment. IR significant desired. Inert weapons release authorized. LSR capable. WISS desired.	
AIRSPACE/RANGE SUPPORT	LSTSS	Large Scale Target Sensor System	A remote control scoring system capable of tracking Laser designator spots.	
AIRSPACE/RANGE SUPPORT	NDBS	No Drop Bomb Scoring	Scores simulated bombing to designated targets. Scores can be relayed via tape debrief.	Should be standard on TACTS.
AIRSPACE/RANGE SUPPORT	IWTS	Imaging Weapons Training System	Virtual simulation to provide pilot uplink imagery of weapon seeker image through TOF to actual target.	Supports SLAM-ER.
AIRSPACE/RANGE SUPPORT	RLSR	Remote Laser Capable	A remote operated ground Laser may designate a target.	Should be standard on a RKD RNG.
AIRSPACE/RANGE SUPPORT	ATIS	Avenger TACTS Interface	Allows the LAAD Avenger team to plug into TACTS and evaluate control/scoring.	
AIRSPACE/RANGE SUPPORT	CEDS	Countermeasures Employments Detection System	Supports training to countermeasures by linking to the ALE via TACTS systems for EW training. Normally included in a TACTS EW range.	
AIRSPACE/RANGE SUPPORT	NST	Non-Sanctuary Tactics Course / Area	Approved Non-Sanctuary Tactics course or area (also known as a LAT approved route or working area). Normally preferred over an MTR for dedicated NST sorties.	
EXTERNAL UNIT SUPPORT	AIC	Air Intercept Control	Ground or Air based tactical intercept control. Proficient in Air to Air tactics and techniques and able to convey appropriate battlefield situational awareness and threat information to the fighters.	
EXTERNAL UNIT SUPPORT	ADV	Adversary	Tactical airframe flown by a proficient pilot able to adequately replicate and present threat aircraft profiles, tactics, and maneuvers. Capable of debriefing fighters on their performance.	Dissimilar refers to any non-F-35 airframe (i.e. F-5, F-16, F/A-18)

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CHAPTER 2

F-35B TRAINING AND READINESS INDIVIDUAL REQUIREMENTS

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CHAPTER 2

F-35B FLEET REPLACEMENT PILOT

2.0 F-35B PILOT TRAINING AND READINESS REQUIREMENTS. This T&R syllabus is based on specific goals and performance standards designed to train fleet replacement pilots in the F-35B. The goal of this chapter is to promulgate basic, conversion/transition, or refresh training progression.

2.1 PILOT DEFINITIONS AND SYLLABUS ASSIGNMENT.

2.1.1 CATEGORY I (CAT I) Replacement Pilot. A newly winged Naval Aviator or Initial Accession undergoing initial pilot training in the F-35B. CAT I pilots will be expected to complete the Basic (B) course of instruction.

2.1.2 CATEGORY II (CAT II) Replacement Pilot. A winged Naval Aviator or otherwise experienced pilot who has previously qualified in another tactical platform and is transitioning or converting to the F-35B. A Transition Pilot (normally a VMFA or equivalent background) should execute the Transition (T) syllabus while a Conversion Pilot (normally a VMA background) should execute the Conversion (C) syllabus.

2.1.3 CATEGORY III (CAT III) Replacement Pilot. A previously qualified F-35B pilot who has not flown the F-35B in 731 days or greater. A CAT III pilot shall complete the Refresh (R) syllabus.

2.1.4 CATEGORY IV (CAT IV) Replacement Pilot. A previously qualified F-35B pilot who has not flown the F-35B in over a year (but less than 2 years). A CAT IV pilot who has not flown the F-35B in 366 days or greater (but within 485 days) should execute a Safe-for-Solo (SS) syllabus. A CAT IV pilot who has not flown the F-35B in 486 days or greater (but within 730 days) should execute the Modified Refresh (MR) syllabus.

2.1.5 CATEGORY V (CAT V) Replacement Pilot. A qualified and current (flown the F-35 within 365 days) F-35A or F-35C pilot who is obtaining an initial F-35B qualification. A CAT V pilot shall complete the Series Conversion (SC) syllabus.

2.2 INDIVIDUAL SYLLABUS DETERMINATION. The FRS Commanding Officer may direct different syllabi than what is prescribed in section 2.1 on a case by case basis.

2.3 TIME TO TRAIN. These times reflect the predicted average time to train when the syllabus is able to be executed in its entirety. Events may be deferred or waived by the FRS commanding officer during the initial stages of flight training due to the current lack of required mission systems, limited aircraft maneuvering envelope, or negative clearance to execute a particular event or phase of training. Any deferred events must be completed at an appropriate time by FRS Instructors.

2.3.1 Basic

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-4	Introduction and Academics	FRS
5-14	Basic Familiarization Training	FRS
15-48	Basic Mission Skill Training	FRS

2.3.2 Conversion

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-4	Introduction and Academics	FRS
5-12	Basic Familiarization Training	FRS
13-34	Basic Mission Skill Training	FRS

2.3.3 Transition

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-4	Introduction and Academics	FRS
5-12	Basic Familiarization Training	FRS
13-34	Basic Mission Skill Training	FRS

2.3.4 Refresh

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-4	Introduction and Academics	FRS
5-10	Basic Familiarization Refresh	FRS
11-26	Basic Mission Skill Refresh	FRS

2.3.5 Modified Refresh

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-3	Introduction and Academics	FRS
4-7	Basic Familiarization Refresh	FRS
8-14	Basic Mission Skill Refresh	FRS

2.3.6 Safe-for-Solo

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-3	Introduction and Academics	FRS
4-6	Basic Familiarization Refresh	FRS
7-10	Basic Mission Skill Refresh	FRS

2.3.7 Series Conversion

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-3	Introduction and Academics	FRS
4-6	Basic Familiarization Training	FRS

2.4 SYLLABUS NOTES

2.4.1 Publications and References. All simulator and flight events shall be planned, briefed, executed, and debriefed IAW the F-35B Flight Series Data, NATOPS, OPNAVINST 3710, NAVMC 3500.14, Doctrinal Publications, and applicable SOPs.

2.4.2 Briefs. All events, to include simulators, shall begin with a comprehensive brief with emphasis on administrative procedures, CRM, tactical procedures, performance standards, and aircrew expectations.

2.4.3 Debriefs. All events, to include simulators, shall terminate with a comprehensive debrief with emphasis on aircrew performance utilizing the most appropriate evaluation techniques and systems available (i.e. TACTS, record playback, debriefing stations, etc.).

2.4.4 Academic Training Forms (ATF). An ATF is required for any initial event completed by a Replacement Pilot, or as determined by the squadron standardization board or commanding officer. In addition, ATFs are required for all flight leadership and instructor syllabus events.

2.4.5 Aviation Performance Records / Track Progression. Hard copy APRs will be maintained by the squadron Training Department and electronic APRs will be maintained by Lockheed Martin contract personnel until the F-35 Training Management System (TMS) is fully functional. MSHARP will be used to log events and monitor track progression. A pilot's APR and track progression shall be maintained electronically in the F-35 Training Management System (TMS) during FRS training.

2.4.6 Simulators. F-35B flight simulators are high fidelity, linkable devices capable of full Tactical Aircrew Combat Training System (TACTS) style recording and debriefing and are required to enhance flight training and airborne proficiency. Simulators shall be flown in the prescribed order of training when squadrons are co-located with mission capable simulators. Where Full Mission Simulators (FMS) are not available, (Deployable) Mission Rehearsal Trainers (D)MRT may be utilized. Where simulators are not available, commanders may authorize simulator events to be either deferred to a later date or flown in the aircraft, as required.

2.4.7 Ordnance. Specific ordnance requirements are delineated for each event although a flight clearance may not exist for ordnance carriage or release. In this circumstance, simulated ordnance deliveries are approved. Once flight clearance is granted actual ordnance shall be used to the maximum extent practical. If a specified type of ordnance is not available it may be replaced by a like type (i.e. GBU-38 for GBU-32) or, as a last resort, may be simulated at the commander's discretion. This approach is designed to give commanders maximum flexibility when attempting to balance training effectiveness with logistical and operational constraints (i.e., NCEA, component availability, range restrictions, weather, etc.).

2.4.8 Aviation Training Rules of Conduct. Pilots shall adhere to aviation training rules of conduct in accordance with Chapter 3 in NAVMC 3500.14 (Aviation Training and Readiness Program Manual).

2.4.9 Environmental Conditions Matrix

Environmental Conditions	
Code	Meaning
D	Shall be flown during hours of daylight: (by exception - there is no use of a symbol)
N	Shall be flown during hours of darkness, may be aided or unaided
N*	Shall be flown during hours of darkness must be flown unaided
(N*)	May be flown during hours of darkness - If flown during hours of darkness must be flown unaided
(N)	May be flown during darkness - If flown during hours of darkness; may be flown aided or unaided
NS	Shall be flown during hours of darkness - Mandatory use of Night Vision Devices
(NS)	May be flown during darkness - If flown during hours of darkness; must be flown with Night Vision Devices
Note - If the event is to be flown in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

2.4.10 Device Matrix

DEVICE	
Symbol	Meaning
A	Flown in Aircraft.
A/S	Aircraft preferred. May be flown in Simulator
S	Flown in Simulator.
S/A	Simulator preferred. May be flown in Aircraft
G	Ground/academic training. May include Distance Learning, Computer Based Training (CBT), Electronic Mediated Lecture (EML), Interactive Course-Ware (ICW), or self-paced study.
ICW	Interactive courseware. Computer based, self-paced training
EML	Electronic Mediated Lecture, instructor taught
LEC	Lecture, may be EML or ICW in accordance with the block software being flown
TEN	Tactical Environment Network. Events designated as TEN require an approved tactical environment simulation capable of introducing both semi-autonomous threats and moving models controllable from the tactical operator station.
TEN+	Enhanced Tactical Environment Network. Events designated as TEN+ require an approved tactical environment simulation and at least one additional, networked, man-in-the-loop simulator to meet the training objectives. A moving model controlled from the operator station does not satisfy the man-in-the-loop requirement.
Note - If the event is to be flown in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

2.4.11 Program of Instruction Matrix

PROGRAM OF INSTRUCTION (POI) MATRIX		
POI	Symbol	Aviation Flying
Basic	B	Initial MOS/Skill Training for pilots without previous tactical aviation experience.
Transition	T	Pilots with fighter and attack (typically F/A-18) experience will be assigned this POI in the FRS.
Conversion*	C	Pilots with mostly attack experience (typically AV-8) will be assigned this POI in the FRS.
Refresher	R	Previously qualified F-35B pilots who have not flown in greater than 2 years.
Modified Refresher	MR	Previously qualified F-35B pilots who have not flown in greater than 18 months, but less than 2 years.
Safe For Solo	SS	Previously qualified F-35B pilots who have not flown in greater than 1 year, but less than 18 months. This POI has also been developed for initial use for DCMA and leadership requiring a DAY FAM/FORM/INST NATOPS qualification.
Series Conversion	SC	Used when transitioning from another F-35 variant to an F-35B.
*EA-6B conversion pilots are expected to be assigned to a Basic POI		

2.4.12 Event Terms

EVENT TERMS	
TERM	DESCRIPTION
Discuss	An explanation of systems, procedures, or maneuvers during the brief, in flight, or post flight. Student is responsible for knowledge of procedures.
Introduce	The instructor may demonstrate a procedure or maneuver to a student, or may coach the PUI through the maneuver without demonstration. The PUI performs the procedures or maneuver with coaching as necessary. The PUI is responsible for knowledge of the procedures.
Practice	The performance of a maneuver or procedure by the PUI that may have been previously introduced in order to attain a specified level of performance.
Demonstrate Proficiency	PUI is required to demonstrate proficiency of a specific task, event, or stage IAW the course exit criteria and established Course Training Standard (CTS).
E-Coded	This term means an event evaluation form is required each time the event is logged. Requires evaluation by a certified standardization instructor (NATOPS I, INST Evaluator etc.)

2.5 ACADEMIC PHASE

2.5.1 Purpose. To ensure Replacement Pilots (RPs) assigned to the Fleet Replacement Squadron (FRS) are given robust academic instruction prior to beginning flight operations in the F-35B. Special attention will be given to preparing the RPs for strictly solo operations in the exclusively single seat platform.

2.5.2 General. Each RP assigned to the FRS shall receive all of the academic classes listed in a matrix at the beginning of each stage in accordance with the prerequisites specified in section 2.6. The academic classes will be tracked and logged in the F-35 Training Management System (TMS). Once complete with each academic phase, the T&R code(s) corresponding to that academic phase will be logged by the squadron training officer in MSHARP.

2.5.2.1 Change request. Standardized academic training materials are developed by Lockheed Martin and Northrop Grumman. Recommendations for changes should be submitted through the squadron Training Systems Support Center (TSSC) representative.

2.5.2.2 Additional external courses of instruction. These courses are required prior to beginning the syllabus.

<u>COURSE</u>	<u>ACTIVITY</u>
SURVIVAL, EVASION, RESISTANCE, AND ESCAPE COURSE	NAS BRUNSWICK, ME or NAS NORTH ISLAND, CA
CENTRIFUGE TRAINING	DON APPROVED COURSE
NASTP CLASS 1 F-35 TRAINING	DON APPROVED COURSE

2.6 CORE SKILL INTRODUCTION TRAINING (1000 LEVEL)

2.6.1 Purpose. This stage introduces newly winged aviators, transition and conversion pilots, and pilots returning to the fleet on the fundamental skills required to employ the F-35B. Introduce/review all procedures, skills, and weapons requisite for an F-35B pilot qualification.

2.6.2 Description

2.6.2.1 Security Requirement. Incoming pilots complete with undergraduate pilot training must hold the appropriate security clearances to begin this POI.

2.6.2.2 Exit Criteria. Exit Criteria are established during the development of a Training Task List. Exit criteria represent the level of skill (and knowledge) a student must attain in order to graduate from a course of training. For the F-35 program, "skill" exit criteria are defined as follows:

EXIT CRITERIA	DESCRIPTION
U - Unable/Unsatisfactory	Requisite skills are either impossible to obtain due to valid mitigating circumstances (e.g. Aircraft Operating Limitations) or student is unable to perform the operation correctly or safely.
F - Fair	The student performs the operation, maneuver or task safely but has limited proficiency. Deviations occur which detract from performance.
G - Good	The student performs the operation, maneuver or task satisfactorily. Deviations occur which are recognized and corrected in a timely manner.
E - Excellent	The student performs the operation, maneuver or task correctly, efficiently, and skillfully. Minor deviations may occur which do not detract from the overall performance.

2.6.2.3 Skill Progression and Course Training Standard (CTS). During skill progression, tasks are distributed across simulator and flight events to achieve course exit criteria. CTS are developed during skill progression to define points where a specific level of skill must be achieved in order to progress through and ultimately graduate from the course. CTS utilize F-35 grading criteria, defined below.

GRADE	DESCRIPTION OF PERFORMANCE
Unknown	Performance not observed or the element was not performed.
Dangerous	Performance was unsafe (any element marked "Dangerous" will require an overall grade of "0").
0	Performance indicates a lack of ability or knowledge.
1	Performance is safe, but indicates limited proficiency. Needs IP assistance to correct errors.
2	Performance almost correct. Can make errors that impact mission/task effectiveness but must recognize and correct them.
3	Performance is correct, efficient and skillful. Can make minor errors that do not impact mission/task effectiveness.
4	Performance reflects an unusually high degree of ability.

2.6.2.4 Correlation between Exit Criteria and CTS

EXIT CRITERIA	CTS
F	1
G	2
E	3

2.6.2.5 Academic Grading Criteria. Passing grade on a written or computer based examination is 80 percent.

2.6.2.6 Proficiency Advancement. If CTS is achieved on a task or event a student may be proficiency advanced to the next event. Pre-planned proficiency advance is specified in the execution matrix with the acronym PA, where the experience level of the student is expected to achieve CTS by the end of stage while bypassing the event. In either scenario, once CTS is achieved it must be maintained or the event will be graded as unsat and will need to be reflowed.

2.6.2.7 Unaccomplished Tasks / Incomplete Events. Sorties that do not complete all tasks in one sortie will document the unaccomplished tasks in F-35 TMS for completion of those tasks on a future sortie. If the tasks had not been completed due to time constraints they must be completed in accordance with the pre-requisites. Due to the development of the F-35B,

certain events will not be executable depending on the availability of mission systems, block software, and aircraft operating limits (AOLs). If the tasks had not been completed due to aircraft capabilities or limitations, sound ORM at the appropriate level must be applied before progressing through the syllabus.

2.6.2.8 F-35B Flight Syllabus Guide. Amplifying information on specific sortie requirements not included in this document (such as specific performance standards for minor tasks or procedural expectations) is listed in the FRS Flight Syllabus Guide (FSG).

2.6.2.9 Pre-requisites. All stage and event pre-requisites will be in accordance with stage and event descriptions below.

2.6.2.10 Stages. The following stages are included in Replacement Pilot Training.

Par No.	STAGE NAME	ABBREVIATION
2.6.3	Familiarization	FAM
2.6.4	Formation	FORM
2.6.5	Aerial Refueling	AAR
2.6.6	Basic Air-to-Surface	AS
2.6.7	Armed Reconnaissance	AR
2.6.8	Close Air Support	CAS
2.6.9	Non-sanctuary Tactics	NST
2.6.10	Tactical Intercepts	TI
2.6.11	Basic Fighter Maneuvering	BFM
2.6.12	Air Combat Maneuvering	ACM
2.6.13	Air Combat Training	AT
2.6.14	Suppression / Destruction of Enemy air Defenses	SE
2.6.15	Aerial Interdiction	AI
2.6.16	Forward Base Operations	FOB
2.6.17	Field Carrier Landing Practice	FCLP

2.6.2.12 Ground/Academic Readings

- a. JTD F-35B Production Section A-20 (Flight Series Data)
- b. AFTTP 3-1/3-3.F-35
- c. F-35B Community and Local SOPs
- d. Flight Syllabus Guide

2.6.3 FAMILIARIZATION (FAM) STAGE

2.6.3.1 Purpose. To qualify the PUI as a basic F-35B aircraft commander. Major areas of focus are aircraft systems, NATOPS/FSD knowledge and qualification, basic aircraft flight characteristics, limitations, normal procedures, short takeoff and vertical landing (STOVL) operations, instrument procedures, Emergency Procedures (EPs), and night systems.

2.6.3.2 General

- a. An FRS Instructor Pilot (IP) shall instruct all flight events.
- b. NATOPS instrument evaluation events shall consist of those items delineated in OPNAVINST 3710.7 series, NAVAIR 00-80T-112 (NATOPS Instrument Flight Manual), FAR/AIM, and other local model manager guidance.
- c. The NATOPS instrument evaluator shall utilize the OPNAV 3710/2 NATOPS Instrument Rating Request and the evaluation metrics required for the accomplishment and performance of the standardized criterion to determine whether the aviator completed the sortie (see Appendix B).
- d. NATOPS instrument evaluatees shall ensure that annual instrument minimums are in accordance with OPNAVINST 3710.7 series prior to commencement of the annual instrument evaluation flight.
- e. A designated F-35B NATOPS instrument check pilot will observe and certify that the PUI is qualified per OPNAVINST 3710.7 series.
- f. NATOPS evaluators/instructors shall conduct the NATOPS evaluation in accordance with OPNAVINST 3710.7 series and other applicable directives, instructions, and orders.
- g. The NATOPS evaluator shall utilize the OPNAV 3710/7 NATOPS Evaluation Report form and the evaluation metrics required for the accomplishment and performance of the standardized criterion to determine whether the aviator completed the sortie (see Appendix A). A letter designating the pilot as NATOPS qualified shall be placed in the pilot's NATOPS jacket upon successful completion.
- h. NATOPS evaluatees shall complete and have graded open book, closed book, and oral examinations prior to the commencement of the actual NATOPS evaluation event.
- i. A designated F-35B NATOPS check pilot will observe and certify that the PUI is NATOPS qualified.

2.6.3.3 Ground Academic Events

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
FAM	0001	Welcome & In processing	1.0	X	X	X	X	X	X	X
FAM	0002	International Traffic in Arms Regulations (ITARS)	1.0	X	X	X	X	X	X	
FAM	0003	ALIS	2.5	X	X	X	X			
FAM	0004	Security Briefing	4.0	X	X	X	X	X	X	
FAM	0005	Course Overview	1.0	X	X	X	X	X	X	X
FAM	0006	Transition Phase Brief	1.0	X	X	X	X	X	X	X
FAM	0007	Training Facility Tour	1.0	X	X	X	X	X	X	X
FAM	0008	Life Support Fitting	2.0	X	X	X				
FAM	0009	Life Support Fitting II	4.0	X	X	X	X	X	X	X
FAM	0010	Local Area Survival	1.0	X						
FAM	0011	F-35 Aircraft Intro & Overview	2.0	X	X	X	X			
FAM	0012	F-35 Publications and References	1.5	X	X	X	X			
FAM	0013	Pilot Training Aid (PTA) Introduction	1.0	X	X	X	X			
FAM	0014	Vehicle Systems Processing (VSP)	1.0	X	X	X	X	X	X	
FAM	0015	Panoramic Cockpit Display (PCD)	2.0	X	X	X	X	X	X	
FAM	0016	HMD	1.5	X	X	X	X	X	X	
FAM	0017	HOTAS	1.5	X	X	X	X	X	X	
FAM	0018	PCD, HOTAS, VR	1.5	X	X	X	X	X	X	

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
FAM	0019	Practice PCD, HOTAS, VR	1.5	X	X	X	X	X	X	
FAM	0020	Integrated Caution Advisory Warning System (ICAWS)	1.5	X	X	X	X	X	X	
FAM	0021	Electrical Power System (EPS)	2.5	X	X	X	X	X	X	
FAM	0022	Power and Thermal Management System (PTMS)	2.0	X	X	X	X	X	X	
FAM	0023	Engine System	4.0	X	X	X	X	X	X	X
FAM	0024	Fuel System	2.0	X	X	X	X	X	X	X
FAM	0025	Fire Protection System	2.0	X	X	X	X	X	X	
FAM	0026	Lighting Systems	1.0	X	X	X	X	X	X	
FAM	0027	Hydraulic System	2.0	X	X	X	X	X	X	X
FAM	0028	Landing Gear Systems	3.0	X	X	X	X	X	X	X
FAM	0029	Canopy System	1.0	X	X	X	X	X	X	
FAM	0030	Egress System/Survival Equipment	2.0	X	X	X	X	X	X	
FAM	0031	Life Support System	1.0	X	X	X	X	X	X	
FAM	0032	Transition Phase Test 1 Review	2.0	X	X	X	X	X	X	X
FAM	0033	Transition Phase Test 1 (Systems)	1.5	X	X	X	X	X	X	X
FAM	0034	Flight Control System (FCS)	3.5	X	X	X	X	X	X	X
FAM	0035	CNI1 (UHF/VHF, IFF, Data links)	2.0	X	X	X	X	X	X	
FAM	0036	CNI2 Navigation	3.0	X	X	X	X	X	X	
FAM	0037	Voice Recognition	1.5	X	X	X	X	X	X	
FAM	0038	Tactical Situation Display (TSD)	1.5	X	X	X	X	X	X	
FAM	0039	Autopilot/Flight Management System	2.0	X	X	X	X	X	X	
FAM	0040	Operating Limitations	1.5	X	X	X	X	X	X	X
FAM	0041	Pre-flight & Post-flight Procedures	1.5	X	X	X	X	X	X	
FAM	0042	Normal Operating Procedures	4.5	X	X	X	X	X	X	X
FAM	0043	Local Area Procedures	1.0	X	X	X	X	X	X	X
FAM	0044	Basic Display Management / Checklists	1.5	X	X	X	X	X	X	
FAM	0045	Operating Procedures	1.5	X	X	X	X	X	X	X
FAM	0046	Instrument Procedures and Test	8.0	X	X	X	X	X	X	
FAM	0047	Instrument Flight Procedures	3.0	X	X	X	X	X	X	
FAM	0048	Radar System 1 - Radar Theory & APG-81 Radar System	2.5	X	X	X	X	X	X	
FAM	0049	Administrative Mission Planning	2.5	X	X	X	X	X	X	
FAM	0050	Transition Phase Test 2 Review	2.0	X	X	X	X	X	X	X
FAM	0051	Transition Phase Test 2 (EP/Boldface)	1.5	X	X	X	X	X	X	X
FAM	0052	SMS	1.0	X	X	X	X	X	X	
FAM	0053	Prognostics and Health Management (PHM) System	1.0	X	X	X	X	X	X	
FAM	0054	CRM	2.0	X	X	X	X	X	X	
FAM	0055	Emergencies 1 (Ground)	4.0	X	X	X	X	X	X	X
FAM	0056	Emergencies 2 (Takeoff)	4.0	X	X	X	X	X	X	X
FAM	0057	Emergencies 3 (Inflight)	3.5	X	X	X	X	X	X	X
FAM	0058	Emergencies 4 (Approach/Landing)	4.0	X	X	X	X	X	X	X
FAM	0059	Basic IR Theory / DAS and NVC	2.5	X	X	X	X	X	X	
FAM	0060	Cross Country Operations	1.0	X	X	X	X	X	X	
FAM	0061	Transition Phase Test 3 Review	2.0	X	X	X	X	X	X	X
FAM	0062	Transition Phase Test 3 (Systems)	1.5	X	X	X	X	X	X	X
FAM	0063	NATOPS Tests	1.5	X	X	X	X	X	X	X
FAM	0064	Human Factors	1.5	X	X	X	X	X	X	
FAM	0065	Night Systems and Operations	2.0	X	X	X	X	X	X	
FAM	0066	Night Lab	3.0	X	X	X	X	X	X	
FAM	0999	Course Critique	1.5	X	X	X	X	X	X	X

2.6.3.4 Simulator / Flight Events

FAM-0099 2.5 B,C,T,R,SS E S/A D 1 ESMT/F-35B

Event. Egress Training

NAVMC 3500.111A
10 Jul 15

Requirement. Introduce and evaluate ingress/egress, seat connections, emergency ground egress, ejection and post-ejection procedures. May be executed in conjunction with NATOPS required Ejection Seat Brief.

Performance Standards

- Discuss ground-based emergency egress procedures and considerations
- Discuss in-flight emergency egress procedures and considerations
- Discuss location and use of survival equipment
- Perform ejection seat ingress, connection, and egress

Prerequisite. FAM0033

FAM-0100 2.0 B,C,T,R,SS E S D 1 FMS

Event. FMS Device Orientation

Requirement. Introduce and demonstrate basic functionality and operations of the F-35B Full Mission Simulator.

Performance Standards

- Discuss FMS specific controls and safety precautions
- Perform ingress and donning of FMS Helmet
- Perform FMS HMD Alignment
- Perform Control and Display familiarization
- Perform egress and doffing of FMS Helmet

Prerequisite. FAM0051

FAM-0101 1.5 B,C,T,R,MR,SS,SC E S D 1 FMS

Event. Normal Operations 1

Requirement. Introduce normal operating procedures including takeoffs, pattern management, landings, and basic aircraft handling.

Performance Standards

- Perform ground operations
- Operate advanced radios
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN/System navigation
- Perform operational checks
- Perform fuel management
- Perform aircraft handling maneuvers
- Perform Panoramic Cockpit Display (PCD) management
- Perform recovery/arrival procedures
- Perform visual approach patterns/landings
- Perform after landing procedures

Prerequisite. FAM0100 (B,C,T,R,SS); FAM0033 (MR,SC)

FAM-0102 1.5 B,C,T,R,SS E S D 1 FMS

Event. Normal Operations 2

Requirement. Practice normal operating procedures including takeoffs, patterns, landings, and basic aircraft handling. Introduce degraded display operations.

Performance Standards

- Perform ground operations
- Operate advanced radios
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN/System navigation
- Perform operational checks
- Perform fuel management
- Perform aircraft handling maneuvers
- Perform Panoramic Cockpit Display (PCD) management
- Perform HMD out recovery/arrival procedures
- Perform HMD out visual approach pattern/landings
- Perform PCD-L or PCD-R out pattern/landings
- Perform after landing procedures

Prerequisite. FAM0101

FAM-0103	1.5	B	E	S	D	1	FMS
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Event. Normal Operations 3

Requirement. Practice normal operating procedures including takeoffs, patterns, landings, and basic aircraft handling. Introduce primary divert airfield procedures.

Performance Standards

- Perform ground operations
- Operate advanced radios
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN/System navigation
- Perform operational checks
- Perform fuel management
- Perform aircraft handling maneuvers
- Perform Panoramic Cockpit Display (PCD) management
- Perform recovery/arrival procedures
- Perform VFR divert procedures
- Perform visual approach pattern/landings
- Perform after landing procedures

Prerequisite. FAM0111

FAM-0104	1.5	B	E	S	D	1	FMS
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Event. Normal Operations 4

Requirement. Practice normal operating procedures including takeoffs, patterns, landings, and basic aircraft handling.

Performance Standards

- Perform ground operations
- Operate advanced radios
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN/System navigation
- Perform operational checks
- Perform fuel management
- Perform aircraft handling maneuvers
- Perform Panoramic Cockpit Display (PCD) management
- Perform recovery/arrival procedures
- Perform visual approach pattern/landings
- Perform after landing procedures

Prerequisite. FAM0132

FAM-0105 1.5 B E S D 1 FMS

Event. Normal Operations 5

Requirement. Practice normal operating procedures including takeoffs, patterns, landings, and basic aircraft handling.

Performance Standards

- Perform ground operations
- Operate advanced radios
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN/System navigation
- Perform operational checks
- Perform fuel management
- Perform aircraft handling maneuvers
- Perform Panoramic Cockpit Display (PCD) management
- Perform recovery/arrival procedures
- Perform visual approach pattern/landings
- Perform after landing procedures

Prerequisite. FAM0135

FAM-0106 1.5 B,C,T,R,MR,SS,SC E S D 1 FMS

Event. First Flight Rehearsal

Requirement. Perform normal operating procedures including takeoffs, patterns, landings, and basic aircraft handling. Student should demonstrate sound decision making and CRM, proper handling of a degraded system or emergency situation, and exhibit adequate situational awareness as an F-35B aviator to complete.

Performance Standards

- Perform ground operations

- Operate advanced radios
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN/System navigation
- Perform operational checks
- Perform fuel management
- Perform aircraft handling maneuvers
- Perform Panoramic Cockpit Display (PCD) management
- Perform recovery/arrival procedures
- Perform visual approach pattern/landings
- Perform degraded system or emergency procedure recovery
- Perform sound CRM and decision making
- Perform after landing procedures

Prerequisite. FAM1100 (B,C,T,SS); FAM0138 (R,MR,SC)

FAM-0111 1.5 B,C,T,R,MR,SS E S D 1 FMS

Event. Instrument Flight Operations 1

Requirement. Introduce instrument flight to include instrument departure, navigation, basic air work, penetration, precision and non-precision approaches and transition to land.

Performance Standards

- Perform ground operations
- Operate advanced radios
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN navigation
- Perform system navigation
- Perform instrument flight procedures
- Perform operational checks
- Perform fuel management
- Perform Panoramic Cockpit Display (PCD) management
- Perform instrument holding procedures
- Perform instrument descents/penetrations
- Perform precision instrument approaches
- Perform non-precision instrument approaches
- Perform missed approaches
- Perform visual approach patterns/landings
- Perform after landing procedures
- Perform adverse weather operations

Prerequisite. FAM0047, FAM0102 (B,C,T,R,SS,MR); FAM0101 (MR)

FAM-0112 1.5 B E S D 1 FMS

Event. Instrument Flight Operations 2

NAVMC 3500.111A
10 Jul 15

Requirement. Practice instrument flight to include instrument departure, navigation, basic air work, penetration, precision and non-precision approaches and transition to land.

Performance Standards

- Perform ground operations
- Perform takeoff procedures
- Perform departure procedures
- Perform TACAN navigation
- Perform system navigation
- Perform instrument flight procedures
- Perform operational checks
- Perform fuel management
- Perform Panoramic Cockpit Display (PCD) management
- Perform instrument holding procedures
- Perform instrument descents/penetrations
- Perform precision instrument approaches
- Perform non-precision instrument approaches
- Perform approach to a STOVL landing
- Perform missed approaches
- Perform visual approach patterns/landings
- Perform after landing procedures
- Perform adverse weather operations

Prerequisite. FAM0137

FAM-0113 1.5 B E S D/N 1 FMS

Event. Pre-Instrument Check ride

Requirement. Demonstrate proficiency in instrument flight procedures.

Performance Standards

IAW OPNAVINST 3710.7 and NAVAIR 00-80T-112

Prerequisite. FAM1143

FAM-0114 1.5 B,C,T,R,MR,SS E S D/N 1 FMS

Event. Instrument Check ride

Requirement. Demonstrate proficiency in instrument flight procedures.

Performance Standards

IAW OPNAVINST 3710.7 and NAVAIR 00-80T-112

Prerequisite. FAM0113 (B);FAM1107 (C,T,R,SS);FAM1105 (MR)

FAM-0131 1.5 B,C,T,R,MR,SS,SC E S D 1 FMS

Event. Emergency Procedures 1

Requirement. Introduce emergency procedures associated with the engine, nose wheel steering (NWS), and landing gear systems. Introduce straight-in flameout pattern and procedures.

Performance Standards

- Perform ground-based abnormal/emergency procedures
- Perform field takeoff abnormal/emergency procedures
- Perform in-flight emergency procedures
- Perform approach and landing emergency procedures
- Perform flameout pattern and landing

Prerequisite. FAM0062, FAM0103 (B); FAM0062, FAM0111 (C,T,R,MR,SS); FAM0062, FAM0101 (SC)

FAM-0132 1.5 B,C,T,R,MR,SS,SC E S D 1 FMS

Event. Emergency Procedures 2

Requirement. Introduce emergency procedures associated with the engine. Introduce overhead flameout pattern and procedures.

Performance Standards

- Perform ground-based abnormal/emergency procedures
- Perform field takeoff abnormal/emergency procedures
- Perform in-flight emergency procedures
- Perform approach and landing emergency procedures
- Perform flameout pattern and landing

Prerequisite. FAM0141 (B,C,T,R,MR,SC); FAM0131 (SS)

FAM-0133 1.5 B,C,T,R,SS E S D 1 FMS

Event. Emergency Procedures 3

Requirement. Introduce emergency procedures associated with the flight control system (FCS) and landing gear. Practice flameout pattern and procedures.

Performance Standards

- Perform ground-based abnormal/emergency procedures
- Perform field takeoff abnormal/emergency procedures
- Perform in-flight emergency procedures
- Perform approach and landing emergency procedures
- Perform flameout pattern and landing

Prerequisite. FAM0143 (B,C,T,R); FAM0132 (SS)

FAM-0134 1.5 B,C,T,R,SS E S D 1 FMS

Event. Emergency Procedures 4

Requirement. Introduce emergency procedures associated with onboard fires, the electrical power system (EPS), power and thermal management system (PTMS), and navigation system. Practice flameout pattern and procedures.

Performance Standards

Perform ground-based abnormal/emergency procedures
Perform field takeoff abnormal/emergency procedures
Perform in-flight emergency procedures
Perform approach and landing emergency procedures
Perform flameout pattern and landing

Prerequisite. FAM0133

FAM-0135 1.5 B,C,T,R,MR,SS,SC E S D 1 FMS

Event. Emergency Procedures 5

Requirement. Introduce emergency procedures associated with onboard bleed leaks, the engine, and EPS. Introduce precautionary flameout pattern and procedures.

Performance Standards

Perform ground-based abnormal/emergency procedures
Perform field takeoff abnormal/emergency procedures
Perform in-flight emergency procedures
Perform approach and landing emergency procedures
Perform precautionary flameout pattern and landing

Prerequisite. FAM0134 (B,C,T,R,SS); FAM0143 (MR,SC)

FAM-0136 1.5 B,C,T,R,MR,SS E S D 1 FMS

Event. Emergency Procedures 6

Requirement. Introduce emergency procedures associated with the engine, FCS, and hydraulic system. Practice precautionary flameout and flameout pattern and procedures.

Performance Standards

Perform ground-based abnormal/emergency procedures
Perform field takeoff abnormal/emergency procedures
Perform in-flight emergency procedures
Perform approach and landing emergency procedures
Perform precautionary flameout pattern and landing

Prerequisite. FAM0105 (B);FAM0135 (C,T,R,MR,SS)

FAM-0137 1.5 B,C,T,R,MR,SS E S D 1 FMS

Event. Emergency Procedures 7

Requirement. Introduce emergency procedures associated with the engine, fuel system, on-board oxygen generating system (OBOGS), and EPS. Practice precautionary flameout and flameout pattern and procedures.

Performance Standards

Perform ground-based abnormal/emergency procedures
Perform field takeoff abnormal/emergency procedures
Perform in-flight emergency procedures
Perform approach and landing emergency procedures

Perform precautionary flameout pattern and landing
Prerequisite. FAM0136

FAM-0138 1.5 B,C,T,R,MR,SS,SC E S D 1 FMS

Event. Emergency Procedures Validation

Requirement. Practice ground, takeoff, inflight, approach, and landing emergency procedures. Student shall demonstrate proper handling of emergencies under degraded environmental and system conditions and exhibit sound decision making, CRM, and judgment.

Performance Standards

- Perform ground-based abnormal/emergency procedures
- Perform field takeoff abnormal/emergency procedures
- Perform in-flight emergency procedures
- Perform approach and landing emergency procedures
- Perform instrument approach(es) in emergency situation
- Perform flameout pattern and landing

Prerequisite. FAM0112 (B);FAM0137 (C,T,R,MR,SS);FAM0135 (SC)

FAM-0141 1.5 B,C,T,R,MR,SC E S D 1 FMS

Event. STOVL Pattern 1

Requirement. Introduce single-ship STOVL takeoffs, patterns and landings.

Performance Standards

- Perform Stick STO procedures
- Perform SL procedures
- Perform RVL procedures
- Perform VL procedures

Prerequisite. FAM0131

FAM-0142 1.5 B,C,T,R,SC E S D 1 FMS

Event. STOVL Pattern 2

Requirement. Practice single-ship STOVL takeoffs, patterns and landings.

Performance Standards

- Perform Button/Auto STO procedures with crosswind
- Perform SL procedures with crosswind
- Perform RVL procedures with crosswind
- Perform VL procedures with crosswind

Prerequisite. FAM0104 (B);FAM0132 (C,T,R,SC)

FAM-0143 1.5 B,C,T,R,MR,SC E S D 1 FMS

Event. STOVL Emergency Procedures

Requirement. Introduce STOVL Emergency Procedures. Practice single-ship STOVL takeoffs, patterns and landings.

Performance Standards

- Perform STOVL takeoff emergency procedures
- Perform STOVL in-flight emergency procedures
- Perform CVL procedures
- Perform SL, RVL, VL procedures

Prerequisite. FAM0142 (B,C,T,R,SC);FAM0132 (MR)

FAM-0144 1.5 B,C,T,R,MR,SC E S D 1 FMS

Event. STOVL Pattern 4

Requirement. Practice single-ship STOVL takeoffs, patterns and landings.

Performance Standards

- Perform STO procedures
- Perform SL, RVL, VL procedures

Prerequisite. FAM1104 (B);FAM1105 (C,T,R,MR,SC)

FAM-0145 1.5 B,C,T,R,MR,SC E S N 1 FMS

Event. Night STOVL Pattern 1

Requirement. Practice single-ship STOVL takeoffs, patterns and landings at night.

Performance Standards

- Perform STO procedures
- Perform SL, RVL, VL procedures

Prerequisite. FAM0161 (B);FAM0066,FAM0191 (C,T,R,MR,SC)

FAM-0146 1.5 B,C,T,R,MR,SC E S N 1 FMS

Event. Night STOVL Pattern 2

Requirement. Practice single-ship STOVL takeoffs, patterns and landings at night.

Performance Standards

- Perform STO procedures
- Perform SL, RVL, VL procedures

Prerequisite. FAM1162 (B);FAM1161 (C,T,R,MR);FAM0145 (SC)

FAM-0161 1.5 B E S N 1 FMS

Event. Night Operations

Requirement. Demonstrate proficiency in night normal operations, night basic handling exercises, and night instruments using the DAS and NVC.

Performance Standards

- Perform basic aircraft handling maneuvers
- Perform NVC / DAS operations

Perform night normal operations
Perform precision instrument approaches
Perform non-precision instrument approaches
Perform in-flight emergency procedures

Prerequisite. FAM0066,FAM0191

FAM-0162 1.5 B,C,T,R,MR E S N 2 FMS

Event. Night Operations, Section Formation

Requirement. Demonstrate proficiency in night normal operations, night basic handling exercises, night formation flying, and night instruments using the DAS and NVC.

Performance Standards

Perform basic aircraft handling maneuvers
Perform NVC / DAS operations
Perform night normal operations
Perform night visual formation procedures
Perform precision instrument approaches
Perform non-precision instrument approaches
Perform in-flight emergency procedures

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. FORM0069,FAM0145

FAM-0190 1.5 B,C,T E S D 1 FMS

Event. Pre-NATOPS Check

Requirement. Demonstrate proficiency in normal operations and emergency procedures for the initial NATOPS evaluation.

Performance Standards

IAW OPNAVINST 3710.7

Prerequisite. FORM1152 (B);FAM0114 (C/T)

FAM-0191 1.5 B,C,T,R,MR,SS,SC E S D 1 FMS

Event. NATOPS Check

Requirement. Demonstrate proficiency in normal operations and emergency procedures for the NATOPS evaluation.

Performance Standards

IAW OPNAVINST 3710.7

Prerequisite. FAM0063,FAM0190 (B,C,T);FAM0063,FAM0114 (R,MR,SS);
FAM0063,FAM1142 (SC). For all pilots, a minimum of 10 F-35B flight hours is required.

NAVMC 3500.111A
10 Jul 15

FAM-1100 1.0 B,C,T,SS E A D 1 F-35B

Event. Supervised Ground Operations

Requirement. Introduce pre-flight, ground operations, taxi, post flight and maintenance debrief while supervised.

Performance Standards

- Demonstrate OMS mission planning and PMD procedures
- Demonstrate pre-flight ALIS CMMS procedures
- Perform air vehicle pre-flight
- Perform ground operations
- Perform air vehicle post-flight
- Demonstrate maintenance debrief actions

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. SSO supervision required

Prerequisite. FAM0138

FAM-1101 1.5 B,C,T,R,MR,SS,SC E A D 2 F-35B

Event. Normal Operations and Instruments 1 (chased)

Requirement. Introduce normal flight operations.

Performance Standards

- Perform OMS mission planning and PMD procedures
- Perform pre-flight procedures
- Perform ground operations
- Perform takeoff procedures
- Perform departure procedures
- Perform VFR/IFR navigation and course rules procedures
- Perform operational checks
- Perform fuel management
- Perform basic aircraft handling maneuvers
- Perform recovery/arrival procedures
- Perform visual approach pattern/landings
- Perform after landing procedures

Ordnance. N/A

Range Requirements. RSTD or MOA

External Syllabus Support. This event is student led, IP chased. The Chase IP shall be the same IP used for FAM0106. SSO required on station for student landings. One F-35B may be substituted for an appropriate fighter support chase aircraft.

Prerequisite. FAM0106

FAM-1102 1.5 B E A D 2 F-35B

Event. Normal Operations and Instruments 2 (chased)

Requirement. Introduce normal instrument flight operations.

Performance Standards

- Perform flight planning and DD-175 preparation
- Perform OMS mission planning and PMD procedures
- Perform pre-flight procedures
- Perform ground operations
- Perform takeoff and departure procedures
- Perform operational checks
- Perform fuel management
- Perform enroute IFR navigation
- Perform TACAN point-to-point
- Perform IFR holding
- Perform precision and non-precision approaches at local divert airfield(s)
- Perform missed approach procedures
- Perform recovery/arrival procedures
- Perform visual approach pattern/landings
- Perform after landing procedures

Ordinance. N/A

Range Requirements. N/A

External Syllabus Support. This event is student led, IP chased. SSO required on station for student landings. One F-35B may be substituted for an appropriate fighter support chase aircraft.

Prerequisite. FAM1101

FAM-1103	1.5	B	E	A	D	2	F-35B
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Event. Normal Operations and Instruments 3 (chased)

Requirement. Practice normal instrument flight operations.

Performance Standards

- Perform flight planning and DD-175 preparation
- Perform OMS mission planning and PMD procedures
- Perform pre-flight procedures and ground operations
- Perform takeoff and departure procedures
- Perform operational checks and fuel management
- Perform enroute IFR navigation
- Perform precision and non-precision approaches at divert airfield(s)
- Perform recovery/arrival procedures
- Perform visual approach pattern/landings

Ordinance. N/A

Range Requirements. N/A

External Syllabus Support. This event is student led, IP chased. SSO required on station for student landings. One F-35B may be substituted for an appropriate fighter support chase aircraft.

NAVMC 3500.111A
10 Jul 15

Prerequisite. FAM1102

FAM-1104 1.5 B E A D 2 F-35B

Event. Normal Operations and Instruments 4 (chased)

Requirement. Practice normal instrument flight operations.

Performance Standards

- Perform flight planning and DD-175 preparation
- Perform OMS mission planning and PMD procedures
- Perform pre-flight procedures and ground operations
- Perform takeoff and departure procedures
- Perform operational checks and fuel management
- Perform enroute IFR navigation
- Perform precision and non-precision approaches at divert airfield(s)
- Perform recovery/arrival procedures
- Perform visual approach pattern/landings

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. This event is student led, IP chased. SSO required on station for student landings. One F-35B may be substituted for an appropriate fighter support chase aircraft.

Prerequisite. FAM1103

FAM-1105 1.5 C,T,R,MR,SS,SC E A D 2 F-35B

Event. Normal Operations, Instruments, and Formation 2

Requirement. Introduce normal instrument and formation flight operations.

Performance Standards

- Perform flight planning and DD-175 preparation
- Perform OMS mission planning and PMD procedures
- Perform pre-flight procedures
- Perform ground operations
- Perform takeoff and departure procedures
- Perform operational checks
- Perform fuel management
- Perform enroute IFR navigation
- Perform TACAN point-to-point
- Perform IFR holding
- Perform precision and non-precision approaches at local divert airfield(s)
- Perform missed approach procedures
- Perform recovery/arrival procedures
- Perform simulated wingman NORDO approach as lead
- Perform visual approach pattern/landings

Perform after landing procedures

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. This event is student led, IP chased. One F-35B may be substituted for an appropriate fighter support chase aircraft.

Prerequisite. FORM0068, FAM1101

FAM-1106 1.5 C, T, R, SS E A D 2 F-35B

Event. Normal Operations, Instruments, and Formation 3

Requirement. Introduce normal instrument and formation flight operations.

Performance Standards

- Perform OMS mission planning and PMD procedures
- Perform pre-flight procedures and ground operations
- Perform takeoff and departure procedures as wingman
- Perform battle damage checks
- Perform basic formation maneuvers
- Perform rejoins/rendezvous
- Perform section visual tactical formations and maneuvering
- Perform section recovery/arrival procedures
- Perform visual approach pattern/landings

Ordnance. N/A

Range Requirements. RSTD or MOA

External Syllabus Support. N/A

Prerequisite. FAM1105

FAM-1107 1.5 C, T, R, SS E A D 2 F-35B

Event. Normal Operations, Instruments, and Formation 4

Requirement. Practice normal instrument and formation flight operations.

Performance Standards

- Perform OMS mission planning and PMD procedures
- Perform pre-flight procedures and ground operations
- Perform mission system and network setup and checks
- Perform takeoff and departure procedures as wingman
- Perform advanced formation maneuvers
- Perform non-visual formation maneuvers and tactics
- Perform section recovery/arrival procedures
- Perform visual approach pattern/landings

Ordnance. N/A

Range Requirements. RSTD or MOA

External Syllabus Support. N/A

NAVMC 3500.111A
10 Jul 15

Prerequisite. FAM1106

FAM-1141 0.8 B,C,T,R,MR,SC E A D 1 F-35B

Event. STOVL Pattern 1

Requirement. Introduce single-ship STOVL takeoffs, patterns and landings.

Performance Standards

- Perform STOVL takeoff procedures
- Perform STOVL visual approach patterns/landings

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. SSO to brief and be on-station for event.

Prerequisite. FAM0144

FAM-1142 0.8 B,C,T,R,MR,SC E A D 1 F-35B

Goal. STOVL Pattern 2

Requirement. Practice single-ship STOVL takeoffs, patterns and landings.

Performance Standards

- Perform STOVL takeoff procedures
- Perform STOVL visual approach patterns/landings

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. SSO to brief and be on-station for event.

Prerequisite. FAM1141

FAM-1143 0.8 B E A D 1 F-35B

Goal. STOVL Pattern 3

Requirement. Practice single-ship STOVL takeoffs, patterns and landings.

Performance Standards

- Perform STOVL takeoff procedures
- Perform STOVL visual approach patterns/landings

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. SSO to brief and be on-station for event.

Prerequisite. FAM1142

FAM-1144 0.8 B,C,T,R,MR,SC E A N 1 F-35B

Goal. Night STOVL Pattern 1

Requirement. Practice single-ship STOVL takeoffs, patterns and landings at night.

Performance Standards

- Perform STOVL takeoff procedures
- Perform STOVL visual approach patterns/landings

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. SSO to brief and be on-station for event.

Prerequisite. FAM0146

FAM-1145 0.8 B E A N 1 F-35B

Goal. Night STOVL Pattern 2

Requirement. Practice single-ship STOVL takeoffs, patterns and landings at night.

Performance Standards

- Perform STOVL takeoff procedures
- Perform STOVL visual approach patterns/landings

Ordnance. N/A

Range Requirements. N/A

External Syllabus Support. SSO to brief and be on-station for event.

Prerequisite. FAM1144

FAM-1161 1.5 B,C,T,R,MR E A N 2 F-35B

Event. Night Operations, Instruments, and Formation 1

Requirement. Introduce normal night operations, instruments, and section formation flight operations.

Performance Standards

- Perform pre-flight procedures and ground operations
- Perform takeoff and departure procedures
- Perform VFR/IFR navigation and course rules procedures
- Perform basic aircraft handling maneuvers
- Perform basic formation maneuvers
- Perform NVC/DAS operations
- Perform rejoins/rendezvous
- Perform section visual tactical formations and maneuvering
- Perform battle damage checks
- Perform section recovery/arrival procedures
- Perform section missed approach
- Perform individual instrument approach (chased)
- Perform visual approach pattern/landings

Ordnance. N/A

Range Requirements. RSTD or MOA

NAVMC 3500.111A
10 Jul 15

External Syllabus Support. This event is student led, IP chased for the night operations and instruments portion (IP led for formation portion).

Prerequisite. FAM0114,FAM0162

FAM-1162 1.5 B E A N 2 F-35B

Event. Night Operations, Instruments, and Formation 2

Requirement. Introduce normal night operations, instruments, and section formation flight operations.

Performance Standards

- Perform pre-flight procedures and ground operations
- Perform mission system and network setup and checks
- Perform takeoff and departure procedures as wingman
- Perform NVC/DAS operations
- Perform advanced formation maneuvers
- Perform non-visual formation maneuvers and tactics
- Perform battle damage checks
- Perform section recovery/arrival procedures
- Perform visual approach pattern/landings

Ordnance. N/A

Range Requirements. RSTD or MOA

External Syllabus Support. N/A

Prerequisite. FAM1161

2.6.4 FORMATION (FORM) STAGE

2.6.4.1 Purpose. Develop proficiency in formation procedures.

2.6.4.2 General

- a. An FRS IP shall instruct all flight events.

2.6.4.3 Ground / Academic Training

- a. Review AFTTP 3-3.F-35

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
FORM	0067	Day Visual Formation Procedures	2.5	X	X	X	X	X	X	X
FORM	0068	Non-Visual Formation Procedures	2.5	X	X	X	X	X		
FORM	0069	Night Formation	1.5	X	X	X	X	X		

2.6.4.4 Simulator / Flight Events

FORM-0151 1.5 B E S D 2 FMS

Event. Section Formation Fundamentals

Requirement. Introduce normal section formation flight operations.

Performance Standards

Perform takeoff and departure procedures as wingman
Perform basic formation maneuvers
Perform rejoins/rendezvous
Perform section visual tactical formations and maneuvering
Perform battle damage checks
Perform section recovery/arrival procedures
Perform visual approach pattern/landing

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. FORM0067, FAM1143

FORM-0152	1.5	B	E	S	D	4	FMS
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Event. Division Formation Fundamentals

Requirement. Introduce normal division formation flight operations.

Performance Standards

Perform mission system and network setup and checks
Perform takeoff and departure procedures as dash 2 or 4
Perform basic formation maneuvers
Perform division rejoins/rendezvous
Perform division visual tactical formations and maneuvering
Perform division battle damage checks
Perform division recovery/arrival procedures
Perform visual approach pattern/landing

External Syllabus Support. Require 4 linked FMS with additional IPs in lead and dash 3 FMS. Two students may fly in this event in the dash 2 and 4 positions.

Prerequisite. FORM0151

FORM-0163	1.5	B	E	S	N	4	FMS
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Event. Night Division Formation

Requirement. Introduce night division formation flight operations.

Performance Standards

Perform OMS mission planning and PMD procedures
Perform pre-flight procedures and ground operations
Perform Link 16 and MADL operations
Perform mission system and network setup and checks
Perform takeoff and departure procedures as dash 2 or 4
Perform basic night formation maneuvers
Perform division rejoins/rendezvous
Perform division non-visual formation
Perform division battle damage checks

Perform division recovery/arrival procedures
Perform visual approach pattern/landing

External Syllabus Support. Require 4 linked FMS with additional IPs in lead and dash 3 FMS. Two students may fly in this event in the dash 2 and 4 positions.

Prerequisite. FAM1162

FORM-1151 1.5 B E A D 2 F-35B

Event. Section Formation

Requirement. Introduce normal section formation flight operations.

Performance Standards

Perform OMS mission planning and PMD procedures
Perform pre-flight procedures and ground operations
Perform takeoff and departure procedures as wingman
Perform basic formation maneuvers
Perform rejoins/rendezvous
Perform section visual tactical formations and maneuvering
Perform battle damage checks
Perform section recovery/arrival procedures
Perform visual approach pattern/landings

Ordnance. N/A

Range Requirements. RSTD or MOA

External Syllabus Support. N/A

Prerequisite. FORM0151

FORM-1152 1.5 B E A D 4 F-35B

Event. Division Formation

Requirement. Introduce normal division formation flight operations.

Performance Standards

Perform OMS mission planning and PMD procedures
Perform pre-flight procedures and ground operations
Perform mission system and network setup and checks
Perform takeoff and departure procedures as dash 2 or 4
Perform basic formation maneuvers
Perform division rejoins/rendezvous
Perform division visual tactical formations and maneuvering
Perform division battle damage checks
Perform division recovery/arrival procedures
Perform visual approach pattern/landing

Ordnance. N/A

Range Requirements. RSTD or MOA

AAR-0171 1.5 B,C,T,R E S D(N) 1 FMS

Event. Air Refueling

Requirement. Demonstrate proficiency in day and night air refueling operations.

Performance Standards

- Perform tanker rejoin and aerial refueling
- Perform probe and drogue air refueling
- Perform standardized communications
- Demonstrate sound ORM

Prerequisite. AAR0070

AAR-1171 1.5 B,C,T,R E A D 2 F-35B

Event. Air Refueling

Requirement. Demonstrate proficiency in day air refueling operations.

Performance Standards

- Perform tanker rejoin and aerial refueling
- Perform probe and drogue air refueling
- Perform standardized communications
- Demonstrate sound ORM

Ordnance. N/A

Range Requirements. RSTD,MOA,AAR

External Syllabus Support. 1 strategic or tactical tanker

Prerequisite. AAR0171

AAR-1172 1.5 B,C,T,R E A N 2 F-35B

Event. Air Refueling

Requirement. Demonstrate proficiency in night air refueling operations.

Performance Standards

- Perform tanker rejoin and aerial refueling
- Perform probe and drogue air refueling
- Perform NVC/DAS refueling
- Perform standardized communications
- Demonstrate sound ORM

Ordnance. N/A

Range Requirements. RSTD,MOA,AAR

External Syllabus Support. 1 strategic or tactical tanker

Prerequisite. FORM1163,AAR1171

2.6.6 BASIC AIR-TO-SURFACE (AS) STAGE

2.6.6.1 Purpose. Introduce pilots to air-to-surface weapons, ordnance

deliveries and PVI in basic air-to-surface skills.

2.6.6.2 General

- a. An FRS IP shall instruct all flight events.
- b. Emphasize Pilot Vehicle Interface (PVI), target acquisition, designation techniques, delivery modes, air-to-ground timeline and attack parameters.

2.6.6.3 Ground / Academic Training

- a. Read ALSA Communication Brevity Manual
- b. Read JP3-09.1 JTTP for Laser Designation Operations

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
AS	0201	A/S Phase Brief	1.0	X	X	X	X	X	X	
AS	0202	F-35 A/S Missions	1.0	X	X	X	X	X	X	
AS	0203	A/S Symbology and Display Management	2.0	X	X	X	X	X	X	
AS	0204	Basic Air-to-Surface PTT	2.5	X	X	X	X	X	X	
AS	0205	Radar System 2, Active A/S Radar Modes	2.0	X	X	X	X	X	X	
AS	0206	SAR Map Theory, Pilot Techniques & Procedures	3.0	X	X	X	X	X	X	
AS	0207	TFLIR/LASER	2.0	X	X	X	X	X	X	
AS	0208	TFLIR/DAS/NVC A/S Interpretation	1.5	X	X	X	X	X	X	
AS	0209	Laser Guided Bombs	2.0	X	X	X	X	X		
AS	0210	GPS Guided Bombs	4.0	X	X	X	X	X		
AS	0211	Small Diameter Bomb	2.5	X	X	X	X	X		
AS	0212	Weaponneering / Ballistic Weapons Planner	2.5	X	X	X	X	X		
AS	0213	Precision Guided Munitions Planning System (PGMPS)	3.5	X	X	X	X	X		
AS	0214	Bomb Hit Assessment (BHA)	1.0	X	X	X	X	X		
AS	0215	Basic Air-to-Surface Target Engagement	8.0	X	X	X	X	X		
AS	0216	Visual Target Engagement and Dive Deliveries	1.5	X	X	X	X	X		
AS	0217	Range Operations and Procedures	1.0	X	X	X	X	X		
AS	0218	Night A/S Employment	1.0	X	X	X	X	X		
AS	0219	A/S Phase Test 1 Review	2.0	X	X	X	X	X		
AS	0220	A/S Phase Test 1	1.5	X	X	X	X	X		
AS	0221	GAU-22/A Gun System	1.5	X	X	X	X	X		
AS	0222	Strafe Fundamentals	3.0	X	X	X	X	X		
AS	0238	A/S Phase Test 2 Review	2.0	X	X	X	X	X		
AS	0239	A/S Phase Test 2 (Recce, CAS, Night)	1.5	X	X	X	X	X		

2.6.6.4 Simulator / Flight Events

AS-0301 1.5 B E S D 1 FMS

Event. SAR Map / GGW Deliveries

Requirement. Introduce PGMPS planning, SAR map procedures, and JDAM employment. Event concludes with integrated sensor employment (TFLIR and SAR) for target location, ID and JDAM employment.

Performance Standards

- Operate precision guided munitions planning system (PGMPS) IAW JMEM and weaponneering SOP
- Perform Air-to-Surface sensor and weapon systems check procedures

- Perform tactical display interpretation
- Perform surface target management functions
- Perform SAR map procedures
- Perform ground target search procedures
- Perform ground target identification procedures
- Perform a GBU-32 weapons delivery within the planned CEP
- Perform bomb hit assessment procedures
- Perform in-flight emergency procedures

Prerequisite. AS0220

AS-0302 1.5 B,C,T,R,MR E S D 2 FMS

Event. Section SAR Map / GGW Deliveries

Requirement. Practice PGMPs planning, SAR map procedures, and introduce JDAM employment in a section. Event concludes with integrated sensor employment (TFLIR and SAR) for target location, ID and JDAM employment while maintaining briefed formations.

Performance Standards

- Operate precision guided munitions planning system (PGMPs) IAW JMEm and weaponing SOP
- Perform Air-to-Surface sensor and weapon systems check procedures
- Perform tactical display interpretation
- Perform surface target management functions
- Perform SAR map procedures
- Perform ground target search procedures
- Perform ground target identification procedures
- Perform section GBU-32 weapons deliveries within the planned CEP
- Perform bomb hit assessment procedures
- Perform in-flight emergency procedures

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AS0301 (B);AS0220 (C,T,R,MR)

AS-0303 1.5 B E S D 1 FMS

Event. TFLIR / LGB Deliveries

Requirement. Practice techniques and procedures for carriage and employment of ordnance and TFLIR/Laser operations.

Performance Standards

- Operate GBU weapons planner IAW JMEm and weaponing SOP
- Perform Air-to-Surface sensor and weapon systems check procedure
- Perform fence check procedures
- Perform tactical display interpretation
- Perform surface target management functions
- Operate EOTS A/G modes
- Perform surface target management functions

Perform roll-in dive deliveries
Perform level deliveries
Perform ground target search procedures
Perform ground target identification procedures
Perform a GBU-12 weapons delivery within the planned weapons CEP
Perform bomb hit assessment procedures

Prerequisite. AS0220

AS-0304 1.5 B,C,T,R,MR E S D 2 FMS

Event. Section TFLIR / LGB Deliveries

Requirement. Practice techniques and procedures for carriage and employment of ordnance and TFLIR/Laser operations and introduce section LGB deliveries.

Performance Standards

Operate GBU weapons planner IAW JMEM and weaponeering SOP
Perform Air-to-Surface sensor and weapon systems check procedure
Perform fence check procedures
Perform tactical display interpretation
Perform surface target management functions
Operate EOTS A/G modes
Perform surface target management functions
Perform level deliveries
Perform ground target search procedures
Perform ground target identification procedures
Perform section GBU-12 weapons deliveries within planned weapon CEP
Perform bomb hit assessment procedures

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AS0303 (B);AS0220 (C,T,R,MR)

AS-0311 1.5 B,C,T,R,MR E S D 1 FMS

Event. Day A/S Strafe

Requirement. Introduce day air-to-surface strafe fundamentals.

Performance Standards

Plan strafe deliveries IAW weaponeering SOP
Perform tactical display interpretation
Perform surface target management functions
Perform roll-in and bunt dive deliveries

Prerequisite. AS0222,AS1303

AS-0312 1.5 B,C,T,R,MR E S N 1 FMS

Event. Night A/S Strafe

Requirement. Introduce night air-to-surface strafe fundamentals.

Performance Standards

- Plan strafe deliveries IAW weaponeering SOP
- Perform tactical display interpretation
- Perform surface target management functions
- Perform roll-in and bunt dive deliveries
- Perform ground target designation procedures
- Perform a gun delivery within the planned CEP
- Perform HMD DAS/NVC operations

Prerequisite. AS0311

AS-1301 1.5 B,C,T,R,MR E A D 2 F-35B

Event. SAR Map / GGW Deliveries

Requirement. Demonstrate proficiency in PGMPS planning, SAR map procedures, TFLIR procedures, and JDAM employment.

Performance Standards

- Operate precision guided munitions planning system (PGMPS) IAW JMEM and weaponeering SOP
- Perform tactical display interpretation
- Perform surface target management functions
- Perform level deliveries
- Perform SAR map procedures
- Perform ground target search procedures
- Perform ground target identification procedures
- Perform a GBU-32 weapons delivery within a planned CEP
- Maintain briefed formations

Ordinance. 1 x GBU-32 (Heavy Inert), 24 Flares

Range Requirements. RSTD, RKD RNG, HVY INERT, JDAM, LSR, IR TGT, RDR TGT, WISS, EXP

External Syllabus Support. None

Prerequisite. AS0302

AS-1302 1.5 B,C,T,R,MR E A D 2 F-35B

Event. TFLIR / LGB Deliveries

Requirement. Demonstrate proficiency in section LGB employment against land based surface targets following tactical timelines.

Performance Standards

- Operate precision guided munitions planning system (PGMPS) IAW JMEM and weaponeering SOP
- Operate GBU weapons planner IAW JMEM and weaponeering SOP
- Perform pre-flight / takeoff procedures
- Perform Air-to-Surface sensor and weapon systems check procedures
- Perform fence check procedures
- Perform tactical display interpretation

Perform surface target management functions
Operate EOTS A/S modes
Perform surface target management functions
Perform level deliveries
Perform ground target search procedures
Perform ground target identification procedures
Perform correct communication
Perform a GBU-12 weapons delivery within the planned CEP
Perform bomb hit assessment procedures
Maintain briefed formations

Ordnance. 1 x GBU-12 (Heavy Inert), 24 Flares

Range Requirements. RSTD, RKD RNG, HVY INERT, LGB, LSR, IR TGT, RDR TGT, WISS, EXP

External Syllabus Support. None

Prerequisite. AS0304

AS-1303 1.5 B,C,T,R,MR E A D 4 F-35B

Event. Division SAR Map / TFLIR Employment

Requirement. Introduce division operation. Practice PGMPS planning, SAR map procedures, TFLIR procedures, JDAM, and LGB employment.

Performance Standards

Operate precision guided munitions planning system (PGMPS) IAW JMEM and weaponering SOP
Perform tactical display interpretation
Perform surface target management functions
Perform level deliveries
Perform SAR map procedures
Perform ground target search procedures
Perform ground target identification procedures
Perform a GBU-32 weapons delivery within a planned CEP
Perform a GBU-12 weapons delivery within a planned CEP
Maintain briefed formations

Ordnance. 1 x GBU-12 (Heavy Inert), 1 x GBU-32 (Heavy Inert), 24 Flares

Range Requirements. RSTD, RKD RNG, HVY INERT, JDAM, LGB, LSR, IR TGT, RDR TGT, WISS, EXP

External Syllabus Support. Two IPs required. One to lead and one in the dash 3 position. Two students may fly in this event in the dash 2 and 4 positions.

Prerequisite. AS1301,AS1302

AS-1311 1.5 B,C,T,R,MR E A D 2 F-35B

Event. Day A/S Strafe

Requirement. Demonstrate Proficiency in day air-to-ground strafe fundamentals.

Performance Standards

- Plan strafe deliveries IAW weaponeering SOP
- Perform tactical display interpretation
- Perform surface target management functions
- Perform roll-in and bunt dive deliveries
- Perform a gun delivery within a planned CEP

Ordnance. 200 rounds 25mm

Range Requirements. RSTD, STRAFE, LSR

External Syllabus Support. N/A

Prerequisite. AS0311

2.6.7 ARMED RECONNAISSANCE (AR) STAGE

2.6.7.1 Purpose. To develop proficiency in conducting Armed Reconnaissance missions.

2.6.7.2 General

- a. An FRS IP shall instruct all flight events.
- b. Emphasize mission planning, mutual support, target acquisition, target recognition, identification, target area tactics, and information flow through the C3 system.

2.6.7.3 Ground / Academic Training

- a. Read JP3-09 Joint Fire Support
- b. Read JP3-60 Joint Targeting

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
AR	0225	Armed Reconnaissance	3.0	X	X	X	X	X		

2.6.7.4 Simulator / Flight Events

AR-0321 1.5 B,C,T,R,MR E S D 2 FMS

Event. Section Armed Reconnaissance

Requirement. Introduce Armed Reconnaissance (AR) concepts, techniques and procedures.

Performance Standards

- Perform AR concept planning
- Perform mission system and network setup and checks
- Perform tactical communications
- Operate EOTS and Radar A/S modes
- Perform ground target search procedures
- Perform target area tactics
- Perform AR tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AR0225

AR-0322 1.5 B E S D 4 FMS

Event. Division Armed Reconnaissance

Requirement. Introduce Division AR concepts, techniques and procedures.

Performance Standards

- Perform AR concept planning
- Perform mission system and network setup and checks
- Perform tactical communications
- Operate EOTS and Radar A/S modes
- Perform ground target search procedures
- Perform target area tactics
- Perform AR tactics

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. AR1321

AR-0323 1.5 B,C,T,R,MR E S N 2 FMS

Event. Section Night Armed Reconnaissance

Requirement. Introduce Section Night AR concepts, techniques and procedures.

Performance Standards

- Perform AR concept planning
- Perform mission system and network setup and checks
- Perform tactical communications
- Operate EOTS and Radar A/S modes
- Perform DAS and NVC target acquisition
- Perform ground target search procedures
- Perform target area tactics
- Perform AR tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AR1322 (B);AR1321 (C,T,R,MR)

AR-1321 1.5 B,C,T,R,MR E A D 2 F-35B

Event. Section Armed Reconnaissance

Requirement. Demonstrate proficiency in Armed Reconnaissance (AR) concepts, techniques and procedures.

Performance Standards

- Perform A/S concept planning
- Perform mission system and network setup and checks
- Perform tactical communications
- Operate EOTS and Radar A/S modes

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Perform ground target search procedures
Perform ground target designation procedures
Perform target area tactics
Perform AR tactics

Ordinance. N/A

Range Requirements. RSTD or MOA, EW, IR TGT, RDR TGT, MOCK, TGT-MOVE

External Syllabus Support. None

Prerequisite. AR0321

AR-1322	1.5	B	E	A	D	4	F-35B
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Event. Division Armed Reconnaissance

Requirement. Demonstrate proficiency in Armed Reconnaissance (AR) concepts, techniques and procedures.

Performance Standards

Perform A/S concept planning
Perform mission system and network setup and checks
Perform tactical communications
Operate EOTS and Radar A/S modes
Perform ground target search procedures
Perform ground target designation procedures
Perform target area tactics
Perform AR tactics

Ordinance. N/A

Range Requirements. RSTD or MOA, EW, IR TGT, RDR TGT, MOCK, TGT-MOVE

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. AR0322

AR-1323	1.5	B,C,T,R,MR	E	A	N	2	F-35B
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Event. Section Night Armed Reconnaissance

Requirement. Demonstrate proficiency in Armed Reconnaissance (AR) concepts, techniques and procedures.

Performance Standards

Perform A/S concept planning
Perform mission system and network setup and checks
Perform tactical communications
Operate EOTS and Radar A/S modes
Perform DAS and NVC target acquisition
Perform ground target search procedures
Perform ground target designation procedures
Perform target area tactics
Perform AR tactics

Ordnance. 1 x GBU-12 (Heavy Inert), 1 x GBU-32 (Heavy Inert), 24 Flare

Range Requirements. RSTD, RKD RNG, HVY INERT, JDAM, LGB, LSR, IR TGT, RDR TGT, WISS, EXP

External Syllabus Support. None

Prerequisite. AR0323

2.6.8 CLOSE AIR SUPPORT (CAS) STAGE

2.6.8.1 Purpose. To develop proficiency in the tactical employment of the F-35 in the CAS role during both day and night at medium altitude in a low to medium threat environment.

2.6.8.2 General

- a. An FRS IP shall instruct all flight events.
- b. Introduce JTTPs and PVI for CAS under Type 1,2 and 3 terminal attack control, day and night, in battlefield and urban environments.
- c. Deliver PGM and forward firing ordnance on tactical targets both day and night in the CAS environment.
- d. Employ ordnance using reactive weaponeering principles
- e. Develop signature management mindset and techniques
- e. Pilots will be introduced to the following external agencies: MACCS integration, supporting arms, Joint Terminal Attack Controller (JTAC), Forward Air Controller (FAC), and Forward Air Controller Airborne (FAC(A)).

2.6.8.3 Ground / Academic Training

- a. Read JP3-09.3, Joint Tactics, Techniques, and Procedures for Close Air Support.
- b. Read NTTP 3-09.2 JFIRE.
- c. Read AFTTP 3-01.F35, Close Air Support.

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
CAS	0230	Close Air Support	2.5	X	X	X	X	X		
CAS	0231	CAS Controls and Displays	2.5	X	X	X	X	X		
CAS	0232	CAS Techniques and Procedures	2.5	X	X	X	X	X		
CAS	0233	Urban CAS	2.0	X						

2.6.8.4 Simulator / Flight Events

CAS-0331 1.5 B,C,T,R E S D 1 FMS

Event. Single-Ship Close Air Support

Requirement. Introduce CAS under Type 1/2/3 Terminal Control in a no-threat environment. Emphasis on avionics use and on-board sensors to locate and prosecute targets in battlefield CAS scenarios. Minimum of four 9-lines utilizing a TOT shall be executed. Both laser guided and inertially aided munitions should be delivered.

Performance Standards

- Perform A/G concept planning
- Perform battlefield CAS tactics
- Perform standardized communications
- Perform ground target identification procedures

Prerequisite. CAS0232

CAS-0332 1.5 B,C,T,R,MR E S D 2 FMS

Event. Section Close Air Support

Requirement. Introduce CAS under Type 1/2/3 Terminal Control in a medium threat environment. Emphasis on sensor usage, section target area tactics, and threat counter tactics. Minimum of four 9-lines utilizing a TOT shall be executed. Laser guided, inertially aided, and 25mm munitions should be delivered.

Performance Standards

- Perform A/G concept planning
- Perform battlefield CAS tactics
- Perform standardized communications
- Perform ground target identification procedures
- Maintain mutual support within element
- Valid deliveries within +/- 15 seconds of assigned TOT

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. CAS0331 (B,C,T,R);CAS0232 (MR)

CAS-0333 1.5 B E S (N) 2 FMS

Event. Section Digital Close Air Support

Requirement. Practice day/night CAS under Type 1/2/3 Terminal Control in a medium threat environment. Emphasis is on future growth F-35 capabilities, such as the DIM page. Minimum of four 9-lines utilizing a TOT shall be executed. Laser guided, inertially aided, and 25mm munitions should be delivered.

Performance Standards

- Perform A/G concept planning
- Maintain coordination with airborne support assets
- Maintain coordination with ground-based support assets
- Perform battlefield CAS tactics
- Valid deliveries within +/- 15 seconds of assigned TOT
- Demonstrate sound ORM

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. CAS0332

CAS-0334 1.5 B E S (N) 2 FMS

Event. Urban Close Air Support

Requirement. Introduce CAS under Type 1/2/3 Terminal Control in an urban, low threat environment. Emphasize systems and sensor management, urban target PID, target coordinate generation, section target area tactics, and threat counter tactics. Minimum of four 9-lines utilizing a TOT shall be executed. Laser guided, inertially aided, and 25mm munitions should be delivered.

Performance Standards

- Perform A/G concept planning
- Maintain coordination with airborne support assets
- Maintain coordination with ground-based support assets
- Perform urban CAS tactics
- Valid deliveries within +/- 15 seconds of assigned TOT
- Demonstrate sound ORM

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. CAS0233,CAS0332

CAS-0335 1.5 B,C,T,R E S N 2 FMS

Event. Night Section Close Air Support

Requirement. Introduce CAS under Type 1/2/3 Terminal Control in a night, low threat environment. Emphasis on avionics and on-board sensor usage at night to locate and prosecute targets in battlefield CAS scenarios. Minimum of four 9-lines utilizing a TOT shall be executed. Laser guided, inertially aided, and 25mm munitions should be delivered.

Performance Standards

- Perform A/G concept planning
- Maintain coordination with airborne support assets
- Maintain coordination with ground-based support assets
- Perform battlefield CAS tactics
- Perform tactical DAS/NVC functions
- Valid deliveries within +/- 15 seconds of assigned TOT
- Demonstrate sound ORM

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. CAS1332

CAS-1331 1.5 B,C,T,R E A D 2 F-35B

Event. Close Air Support (Chased)

Requirement. Introduce CAS techniques and procedures under Type 1/2/3 Terminal Control in a no threat environment. Emphasis is on avionics use and utilization of on-board sensors to locate and prosecute targets in a battlefield scenario. Standard procedures include check-in / check-out, 9-line use and execution, routing, and target area tactics. Minimum of three

9-lines utilizing a TOT shall be executed. IP shall operate as a chase aircraft and monitor student procedures.

Performance Standards

- Perform A/G concept planning
- Maintain coordination with ground-based support assets
- Perform battlefield CAS tactics
- Valid deliveries within +/- 15 seconds of assigned TOT

Ordnance. 1 x GBU-12 (Heavy Inert), 1 x GBU-32 (Heavy Inert), 200RD 25MM, 24 Flares

Range Requirements. RSTD, COMPLEX, JCAS, HVY INERT, JDAM, LGB, IR TGT, RDR TGT, LSR, STRAFE, EXP

External Syllabus Support. JTAC or FAC or FAC(A)

Prerequisite. CAS0333 (B);CAS0332 (C,T,R)

CAS-1332 1.5 B,C,T,R,MR E A D 2 F-35B

Event. Section Close Air Support

Requirement. Demonstrate proficiency in CAS techniques and procedures under Type 1/2/3 Terminal Control in a medium threat environment. Minimum of three 9-lines utilizing a TOT shall be executed.

Performance Standards

- Perform A/G concept planning
- Maintain coordination with ground-based support assets
- Provide mutual support as wingman
- Perform battlefield CAS tactics
- Valid deliveries within +/- 15 seconds of assigned TOT

Ordnance. 1 x GBU-12 (Heavy Inert), 1 x GBU-32 (Heavy Inert), 200RD 25MM, 24 Flares

Range Requirements. RSTD, COMPLEX, JCAS, HVY INERT, JDAM, LGB, IR TGT, RDR TGT, LSR, STRAFE, EXP

External Syllabus Support. JTAC or FAC or FAC(A)

Prerequisite. CAS1331 (B,C,T,R);CAS0332 (MR)

CAS-1333 1.5 B,C,T,R E A N 2 F-35B

Event. Night Section Close Air Support

Requirement. Demonstrate proficiency in night CAS techniques and procedures under Type 1/2/3 Terminal Control in a low threat environment. Minimum of three 9-lines utilizing a TOT shall be executed. Aircrew should be exposed to IR marker talk-on procedures.

Performance Standards

- Operate EOTS A/G modes
- Perform ground target designation procedures
- Perform tactical DAS/NVC operations
- Provide mutual support as wingman
- Perform standardized communications

Valid deliveries within +/- 15 seconds of assigned TOT

Ordnance. 1 x GBU-12 (Heavy Inert), 1 x GBU-32 (Heavy Inert), 200RD 25MM, 24 Flares

Range Requirements. RSTD, COMPLEX, JCAS, HVY INERT, JDAM, LGB, IR TGT, RDR TGT, LSR, STRAFE, EXP

External Syllabus Support. JTAC or FAC or FAC(A)

Prerequisite. CAS0335

2.6.9 NON-SANCTUARY TACTICS (NT) STAGE

2.6.9.1 Purpose. Introduce basic and advanced maneuvers in low altitude environment.

2.6.9.2 General

- a. An FRS IP shall instruct all flight events.
- b. Emphasize transitions from high or medium altitude into the low altitude environment, communications, and maneuver techniques.
- c. Upon completion of this stage students will learn to use mission cross check times to maintain terrain clearance tasks while operating in the low altitude environment.
- d. This stage events shall be flown on an approved NST course.
- e. Currency and altitude restrictions as stated in the NAVMC 3500.14C T&R Program Manual apply.

2.6.9.3 Ground / Academic Training

- a. Read NAVMC 3500.14C, Aviation Training and Readiness Program Manual, Chapter 3.

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
NST	0235	NST Fundamentals	2.0	X	X	X	X			
NST	0236	Low Altitude Intercepts	1.0	X	X	X	X			

2.6.9.4 Simulator / Flight Events

NST-0351 1.5 B,C,T,R E S D 1 FMS

Event. Non-Sanctuary Tactics Basics

Requirement. Introduce transitions to the low altitude environment and practice low altitude handling characteristics and maneuvers.

Performance Standards

Perform maneuvers as briefed
Remain above briefed minimum altitude

Prerequisite. NST0235

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NST-0352 1.5 B,C,T,R E S D 2 FMS

Event. Section Non-Sanctuary Tactics Basics

Requirement. Practice transitions to the low altitude environment, low altitude handling characteristics, and maneuvers. Introduce tactical intercepts in the low altitude environment.

Performance Standards

- Perform maneuvers as briefed
- Remain above briefed minimum altitude
- Perform 2vX Tactical Intercept in the low altitude environment

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. NST1351, TI1408, NST0236

NST-1351 1.5 B,C,T,R E A D 2 F-35B

Event. Non-Sanctuary Tactics Basics

Requirement. Introduce transitions to the low altitude environment and practice low altitude handling characteristics and maneuvers.

Performance Standards

- Perform maneuvers as briefed
- Remain above briefed minimum altitude

Ordnance. N/A

Range Requirements. NST or MTR

External Syllabus Support. N/A

Prerequisite. NST0351

NST-1352 1.5 B,C,T,R E A D 2 F-35B

Event. Section Non-Sanctuary Tactics Basics

Requirement. Practice transitions to the low altitude environment, low altitude handling characteristics, and maneuvers. Introduce tactical intercepts in the low altitude environment.

Performance Standards

- Perform maneuvers as briefed
- Remain above briefed minimum altitude
- Perform 2vX Tactical Intercept in the low altitude environment

Ordnance. N/A

Range Requirements. NST or MTR, AA

External Syllabus Support. Minimum 2 Dissimilar Adversaries, AIC

Prerequisite. NST0352

2.6.10 TACTICAL INTERCEPTS (TI) STAGE

2.6.10.1 Purpose. To develop proficiency in all-weather tactical intercepts, weapon employment, and PVI in the air-to-air arena.

2.6.10.2 General

- a. An FRS IP shall instruct all flight events.
- b. Increase knowledge of air-to-air aircraft systems, weapons, and performance characteristics.
- c. Introduce shot validation for air-to-air weapons.
- d. Emphasize signature management, mutual support, formation keeping, sensor usage, standardized comm, weapons employment, AIC integration, threat reactions, targeting, and flow decisions.
- e. Introduce TACTS debrief ROE.
- f. AIC should be utilized to the maximum extent possible.

2.6.10.3 Ground / Academic Training

Read ALSA Comm Brevity

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
TI	0240	A/A Phase Brief	1.0	X	X	X	X	X		
TI	0241	F-35 Fighter Combat Missions	1.5	X	X	X	X	X		
TI	0242	Radar System 3 (A/A Tact Modes)	3.0	X	X	X	X			
TI	0243	EOTS A/A	1.0	X	X	X	X			
TI	0244	A/A TSD Procedures	1.0	X	X	X	X			
TI	0245	CNI 3 Advanced Communications	2.5	X	X	X	X			
TI	0246	Battle Space Knowledge	3.0	X	X	X	X			
TI	0247	Air Threats	3.5	X	X	X	X			
TI	0248	Electronic Warfare Systems	3.0	X	X	X	X			
TI	0249	Electronic Support Measures	2.0	X	X	X	X			
TI	0250	Air Track Fusion	1.0	X	X	X	X			
TI	0251	Threat Warning Display (TWD)	1.5	X	X	X	X			
TI	0252	Low Observable Fundamentals	2.0	X	X	X	X			
TI	0253	Countermeasures	3.0	X	X	X	X			
TI	0254	Electronic Attack (A/A)	1.5	X	X	X	X			
TI	0255	AIM-120 AMRAAM	3.5	X	X	X	X			
TI	0256	Air Threat Counter tactics	1.5	X	X	X	X			
TI	0257	Basic Intercepts	3.0	X	X	X	X			
TI	0258	Advanced Intercepts (1 v X)	3.0	X	X	X	X			
TI	0259	A/A Mission Planning	3.0	X	X	X	X			
TI	0260	Tactical Intercept (TI) Part Task Training	2.0	X	X	X	X			
TI	0261	A/A Phase Test 1 Review	2.0	X	X	X	X			
TI	0262	A/A Phase Test 1 (Systems, Weapons, Countermeasures)	1.5	X	X	X	X			
TI	0263	Section TI Tactics	4.0	X	X	X	X	X		
TI	0264	Night Air to Air Employment	2.0	X	X	X	X	X		
TI	0265	Division TI Tactics	3.0	X	X	X	X	X		
TI	0266	A/A Phase Test 2 Review	2.0	X	X	X	X	X		
TI	0267	A/A Phase Test 2 (BFM,ACM,TI)	1.5	X	X	X	X	X		

2.6.10.4 Simulator / Flight Events

TI-0401 1.5 B E S D 1 FMS

Event. Single Ship Tactical Intercepts 1

Requirement. Introduce tactical intercept procedures. Emphasis is placed on basic signature management, basic sensor employment, correct communication, and weapon employment procedures. A minimum of 6 runs, including at least one stern conversion, are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Prerequisite. TI0257

TI-0402 1.5 B E S D 1 FMS

Event. Single Ship Tactical Intercepts 2

Requirement. Practice tactical intercept procedures. Emphasis is placed on basic signature management, basic sensor employment, correct communication, and weapon employment procedures. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Prerequisite. TI0401

TI-0403 1.5 B,C,T,R,MR E S D 1 FMS

Event. Single Ship Tactical Intercepts 3

Requirement. Practice tactical intercept procedures. Emphasis is placed on basic signature management, basic sensor employment, correct communication, and weapon employment procedures. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Prerequisite. TI0402 (B);TI0257 (C,T,R); TI0241 (MR)

TI-0404	1.5	B		E	S	D	1	FMS
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Event. Single Ship Advanced Tactical Intercepts 1

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, advanced sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Prerequisite. TI0262, TI1402

TI-0405	1.5	B		E	S	D	1	FMS
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Event. Single Ship Advanced Tactical Intercepts 2

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, advanced sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Prerequisite. TI0404

TI-0406	1.5	B,C,T,R,MR		E	S	D	1	FMS
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Event. Single Ship Advanced Tactical Intercepts 3

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, advanced sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Prerequisite. TI0405 (B);TI0262, TI0403 (C,T,R,MR)

TI-0407 1.5 B E S D 2 FMS

Event. Section Tactical Intercepts 1

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. TI0267

TI-0408 1.5 B,C,T,R,MR E S D 2 FMS

Event. Section Tactical Intercepts 2

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. TI0407 (B);TI0267 (C,T,R,MR)

TI-0409 1.5 B,C,T,R E S D 2 FMS

Event. Section Tactical Intercepts 3

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. TI1407

TI-0410 1.5 B,C,T,R E S N 1 FMS

Event. Night Single Ship Advanced Tactical Intercepts

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, advanced sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform DAS/NVC Air-to-Air functions
- Perform proper signature management and 3D geometry
- Perform proper targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Prerequisite. TI1405

TI-0411 1.5 B,C,T,R E S N 2 FMS

Event. Night Section Tactical Intercepts

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform DAS/NVC Air-to-Air functions
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. TI1408, TI1409

TI-0412 1.5 B E S D 2 FMS

Event. Section Tactical Intercept Contingencies

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, battle space management, and contingency situations. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. TI1410

TI-0413 1.5 B E S D 4 FMS

Event. Division Tactical Intercepts 1

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. TI1411

TI-0414 1.5 B,C,T,R,MR E S D 4 FMS

Event. Division Tactical Intercepts 2

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. TI1412 (B);TI1410 (C,T,R);TI1407 (MR)

TI-1401 1.5 B E A D 2 F-35B

Event. 1v1 Basic Tactical Intercepts 1

Requirement. Practice tactical intercept procedures. Emphasis is placed on basic signature management, sensor employment, correct communication, and weapon employment procedures. A minimum of 4 runs, including at least one stern conversion, are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions

Perform proper threat reactions

Ordnance. CATM-9X

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. One F-35B may be substituted for an appropriate fighter type aircraft that the IP may lead, provide reverse AIC, provide adversary support, and instruct from.

Prerequisite. TI0403

TI-1402 1.5 B E A D 2 F-35B

Event. 1v1 Basic Tactical Intercepts 2

Requirement. Practice tactical intercept procedures. Emphasis is placed on basic signature management, sensor employment, correct communication, and weapon employment procedures. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. One F-35B may be substituted for an appropriate fighter type aircraft that the IP may lead, provide reverse AIC, provide adversary support, and instruct from.

Prerequisite. TI1401

TI-1403 1.5 B E A D 2 F-35B

Event. 1v1 Advanced Tactical Intercepts 1

Requirement. Practice advanced tactical intercept procedures. Emphasis is placed on signature management, advanced sensor employment, correct communication, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. One F-35B may be substituted for an appropriate fighter type aircraft that the IP may lead, provide reverse AIC, provide adversary support, and instruct from.

Prerequisite. TI0406

TI-1404 1.5 B,C,T,R,MR E A D 2 F-35B

Event. 1v1 Advanced Tactical Intercepts 2

Requirement. Practice advanced tactical intercept procedures. Emphasis is placed on signature management, advanced sensor employment, correct communication, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. One F-35B may be substituted for an appropriate fighter type aircraft that the IP may lead, provide reverse AIC, provide adversary support, and instruct from.

Prerequisite. TI1403 (B);TI0406 (C,T,R,MR)

TI-1405 1.5 B,C,T,R E A D 2 F-35B

Event. 1v1 Advanced Tactical Intercepts 3

Requirement. Practice advanced tactical intercept procedures. Emphasis is placed on signature management, advanced sensor employment, correct communication, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. One F-35B may be substituted for an appropriate fighter type aircraft that the IP may lead, provide reverse AIC, provide adversary support, and instruct from.

Prerequisite. TI1404

TI-1406 1.5 B E A D 2 F-35B

Event. Section Tactical Intercepts 1

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. 2 Dissimilar Adversaries, AIC.

Prerequisite. TI0408

TI-1407 1.5 B,C,T,R,MR E A D 2 F-35B

Event. Section Tactical Intercepts 2

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. 2 Dissimilar Adversaries, AIC.

Prerequisite. TI1406 (B);TI0408 (C,T,R,MR)

TI-1408 1.5 B,C,T,R E A D 2 F-35B

Event. Section Tactical Intercepts 3

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. 2 Dissimilar Adversaries, AIC.

Prerequisite. TI0409

TI-1409 1.5 B,C,T,R E A N 2 F-35B

Event. Night Single Ship Advanced Tactical Intercepts

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, advanced sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform DAS/NVC Air-to-Air functions
- Perform proper signature management and 3D geometry
- Perform proper targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. One F-35B may be substituted for an appropriate night capable fighter type aircraft that the IP may lead, provide reverse AIC, provide adversary support, and instruct from.

Prerequisite. TI0410

TI-1410 1.5 B,C,T,R E A N 2 FMS

Event. Night Section Tactical Intercepts

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 6 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform DAS/NVC Air-to-Air functions
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. 2 Night Capable Dissimilar Adversaries, AIC.

Prerequisite. TI0411

TI-1411 1.5 B E A D 2 F-35B

Event. Section Tactical Intercept Contingencies

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, battle space management, and contingency situations. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. 2 Dissimilar Adversaries, AIC.

Prerequisite. TI0412

TI-1412 1.5 B E A D 4 F-35B

Event. Division Tactical Intercepts 1

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions. 4xDissimilar Adversary, AIC required.

Prerequisite. TI0413

TI-1413 1.5 B,C,T,R,MR E A D 4 F-35B

Event. Division Tactical Intercepts 2

Requirement. Practice advanced tactical intercept procedures against an unknown number of adversaries. Emphasis is placed on signature management, mutual support, sensor employment, correct communication, targeting decisions, weapon employment procedures, threat recognition and reactions, and battle space management. A minimum of 4 runs are required to complete.

Performance Standards

- Perform standardized tactical communications
- Perform proper Air-to-Air sensor and weapon systems setup and usage
- Perform tactical display management and interpretation
- Perform proper signature management and 3D geometry
- Perform proper mutual support and targeting
- Perform proper intercept mechanics and flow decisions
- Perform proper threat reactions

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EXP

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions. 4xDissimilar Adversary, AIC required.

Prerequisite. TI0414

2.6.11 BASIC FIGHTER MANEUVERING (BFM) STAGE

2.6.11.1 Purpose. To introduce advanced handling, PVI and basic fighter maneuvering in the visual arena against a CAT IV adversary.

2.6.11.2 General

- a. An FRS IP shall instruct all flight events.
- b. Introduce E/M diagrams and how they apply to aircraft maneuvering and lvl BFM.
- c. Introduce Weapon Launch Acceptability Regions (LARs) and shot validation.
- d. Introduce Threat capabilities in the visual arena.
- e. Develop the requisite skills to fly the aircraft at various speeds, high alpha and high G while maneuvering against an adversary.

2.6.11.3 Ground / Academic Training

- a. Review the F-35B EM Diagram
- b. Review F-35B flight characteristics in the FSD.
- c. Read NAVMC 3510.14C, Aviation Training and Readiness Program Manual, Chapter 4, ACM Rules of Conduct.
- d. Review OCF procedures.
- e. Review AIM-120, AIM-9X and Gun min / max range LARs.
- f. Review AR 1/2, SAR 1/2, IR 1/2/3 ROT.

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
BFM	0270	Advanced Handling	1.5	X	X	X	X	X		
BFM	0271	Visual Wpns Envelopes/Employment	1.0	X	X	X	X	X		
BFM	0272	Offensive BFM	2.5	X	X	X	X	X		
BFM	0273	Defensive BFM	3.0	X	X	X	X	X		
BFM	0274	High Aspect BFM	2.0	X	X	X	X	X		

2.6.11.4 Simulator / Flight Events

BFM-0501 1.5 B,C,T,R E S D 1 FMS

Event. Advanced Handling

Requirement. Introduce Advanced Handling Characteristics maneuvers and out-of-control recovery procedures.

Performance Standards

- Perform basic aircraft handling maneuvers
- Perform advanced handling maneuvers
- Perform in-flight emergency procedures

Prerequisite. BFM0271

BFM-0502 1.5 B,C,T,R,MR E S D 2 FMS

Event. Offensive Basic Fighter Maneuvers

Requirement. Introduce Basic Fighter Maneuvers (BFM) starting from an offensive position. Emphasis is on proper application of turn circle theory, out of plane maneuvering, maintaining the offensive advantage, weapons employment, and taking valid shots.

Performance Standards

- Perform OBFM exercises
- Perform OBFM engagement set-up procedures
- Perform OBFM fight analysis
- Perform OBFM maneuvers
- Demonstrate LAR recognition
- Demonstrate valid shots

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. BFM0272,BFM1501 (B,C,T,R);BFM0272 (MR)

BFM-0503 1.5 B,C,T,R,MR E S D 2 FMS

Event. Defensive Basic Fighter Maneuvers

Requirement. Introduce Basic Fighter Maneuvers (BFM) starting from a defensive position. Emphasis is on recognizing and applying turn circle theory, out of plane maneuvering, recognizing and denying the attacker from weapons employment opportunities, neutralizing the attacker, and separating from or killing the attacker.

Performance Standards

- Perform DBFM exercises
- Perform DBFM engagement set-up procedures
- Perform DBFM fight analysis
- Perform DBFM maneuvers
- Demonstrate WEZ recognition
- Demonstrate effective countermeasure use

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. BFM0273,BFM1504 (B,C,T,R);BFM0273 (MR)

BFM-0504 1.5 B,C,T,R,MR E S D 2 FMS

Event. High Aspect Basic Fighter Maneuvers

Requirements. Introduce Basic Fighter Maneuvers (BFM) starting from a neutral position. Emphasis is on denying the bandit the first shot while achieving the first shot opportunity; gaining a positional advantage to employ follow on weapons; separating before becoming defensive and transitioning to OBFM or DBFM as appropriate.

Performance Standards

- Perform HABFM exercises
- Perform HABFM engagement set up procedures
- Perform HABFM fight analysis

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Perform HABFM maneuvers
Perform valid weapons employment in a HABFM environment
Demonstrate effective countermeasures use

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. BFM0274, BFM1507 (B, C, T, R); BFM0274 (MR)

BFM-1501 1.5 B, C, T, R E A D 2 F-35B

Event. Advanced Handling

Requirements. Practice Advanced Handling Characteristics maneuvers and max performance capabilities.

Performance Standards

Perform advanced handling maneuvers

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. One F-35B may be substituted for an appropriate fighter type aircraft that the IP may lead, provide adversary support, and instruct from.

Prerequisite. BFM0501

BFM-1502 1.5 B E A D 2 F-35B

Event. Offensive Basic Fighter Maneuvers 1

Requirements. Practice Basic Fighter Maneuvers (BFM) starting from an offensive position. Emphasis is on proper application of turn circle theory, out of plane maneuvering, maintaining the offensive advantage, weapons employment and taking valid shots.

Performance Standards

- Perform OBFM exercises
- Perform OBFM engagement set-up procedures
- Perform OBFM fight analysis
- Perform OBFM maneuvers
- Demonstrate LAR recognition
- Demonstrate valid shots

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. N/A

Prerequisite. BFM0502

BFM-1503 1.5 B, C, T, R E A D 2 F-35B

Event. Offensive Basic Fighter Maneuvers 2

Requirements. Practice Basic Fighter Maneuvers (BFM) starting from an offensive position. Emphasis is on proper application of turn circle theory,

out of plane maneuvering, maintaining the offensive advantage, weapons employment and taking valid shots.

Performance Standards

- Perform OBFM exercises
- Perform OBFM engagement set-up procedures
- Perform OBFM fight analysis
- Perform OBFM maneuvers
- Demonstrate LAR recognition
- Demonstrate valid shots

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. N/A

Prerequisite. BFM1502 (B);BFM0502 (C,T,R)

BFM-1504 1.5 B,C,T,R,MR E A D 2 F-35B

Event. Offensive Basic Fighter Maneuvers 3

Requirements. Practice Basic Fighter Maneuvers (BFM) starting from an offensive position. Emphasis is on proper application of turn circle theory, out of plane maneuvering, maintaining the offensive advantage, weapons employment and taking valid shots.

Performance Standards

- Perform OBFM exercises
- Perform OBFM engagement set-up procedures
- Perform OBFM fight analysis
- Perform OBFM maneuvers
- Demonstrate LAR recognition
- Demonstrate valid shots

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. N/A

Prerequisite. BFM1503 (B,C,T,R);BFM0502 (MR)

BFM-1505 1.5 B E A D 2 F-35B

Event. Defensive Basic Fighter Maneuvers 1

Requirement. Practice Basic Fighter Maneuvers (BFM) starting from a defensive position. Emphasis is on recognizing and applying turn circle theory, out of plane maneuvering, recognizing and denying the attacker from weapons employment opportunities, neutralizing the attacker and separating or killing the attacker.

Performance Standards

- Perform DBFM exercises
- Perform DBFM engagement set-up procedures
- Perform DBFM fight analysis

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Perform DBFM maneuvers
Demonstrate WEZ recognition
Demonstrate effective expendable use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. N/A

Prerequisite. BFM0503

BFM-1506 1.5 B,C,T,R E A D 2 F-35B

Event. Defensive Basic Fighter Maneuvers 2

Requirement. Practice Basic Fighter Maneuvers (BFM) starting from a defensive position. Emphasis is on recognizing and applying turn circle theory, out of plane maneuvering, recognizing and denying the attacker from weapons employment opportunities, neutralizing the attacker and separating or killing the attacker.

Performance Standards

Perform DBFM exercises
Perform DBFM engagement set-up procedures
Perform DBFM fight analysis
Perform DBFM maneuvers
Demonstrate WEZ recognition
Demonstrate effective expendable use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. N/A

Prerequisite. BFM1505 (B);BFM0503 (C,T,R)

BFM-1507 1.5 B,C,T,R,MR E A D 2 F-35B

Event. Defensive Basic Fighter Maneuvers 3

Requirement. Practice Basic Fighter Maneuvers (BFM) starting from a defensive position. Emphasis is on recognizing and applying turn circle theory, out of plane maneuvering, recognizing and denying the attacker from weapons employment opportunities, neutralizing the attacker and separating or killing the attacker.

Performance Standards

Perform DBFM exercises
Perform DBFM engagement set-up procedures
Perform DBFM fight analysis
Perform DBFM maneuvers
Demonstrate WEZ recognition
Demonstrate effective expendable use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. N/A

Requirements. Introduce Basic Fighter Maneuvers (BFM) starting from a neutral position. Emphasis is on denying the bandit the first shot while achieving the first shot opportunity; gaining a positional advantage to employ follow on weapons; separating before becoming defensive and transitioning to OBFM or DBFM as appropriate.

Performance Standards

- Perform HABFM exercises
- Perform HABFM engagement set up procedures
- Perform HABFM fight analysis
- Perform HABFM maneuvers
- Perform valid weapons employment in a HABFM environment
- Demonstrate effective expendables use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. N/A

Prerequisite. BFM1509 (B,C,T,R);BFM0504 (MR)

2.6.12 AIR COMBAT MANEUVERING (ACM) STAGE

2.6.12.1 Purpose. To teach F-35B pilots multi-plane engaged maneuvering, mutual support, and how to transition from the BVR to WVR arena.

2.6.12.2 General

- a. An FRS IP shall instruct all flight events.
- b. Introduce communication priorities.
- c. Introduce cap management and visual lookout.
- d. Introduce weapons deconfliction rules of thumb.
- e. Introduce ROE and on/off board ID.

2.6.12.3 Ground / Academic Training

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
ACM	0275	WVR ACM Concepts & Communication	1.5	X	X	X	X			
ACM	0276	BVR ACM Concepts & Communication	1.5	X	X	X	X			

2.6.12.4 Simulator / Flight Events

ACM-0511 1.5 B,C,T,R E S D 3 FMS

Event. ACM WVR

Requirements. Introduce WVR ACM setups and mechanics. Emphasis is on visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Engagements shall be commenced from visual sets (beam or stern).

Performance Standards

- Perform WVR ACM engagement set up procedures

Perform effective WVR ACM and Communications
Perform valid weapons employment
Demonstrate effective countermeasures use

External Syllabus Support. Require 3 linked FMS with IP in lead FMS, evaluating IP at console, and additional IP flying as adversary.

Prerequisite. ACM0275

ACM-0512 1.5 B,C,T,R E S D 3 FMS

Event. ACM to Visual

Requirements. Introduce tap the cap setups and mechanics. Emphasis is on enemy detection, visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Fighters should be established on cap with unannounced engagements coming from forward, beam, and rear quarter.

Performance Standards

Perform enemy detection (sensor and visual)
Perform Positive ID
Perform effective WVR ACM and Communications
Perform valid weapons employment
Demonstrate effective countermeasures use

External Syllabus Support. Require 3 linked FMS with IP in lead FMS, evaluating IP at console, and additional IP flying as adversary.

Prerequisite. ACM1512

ACM-0513 1.5 B,C,T,R E S D 3 FMS

Event. ACM BVR

Requirements. Introduce BVR to WVR ACM setups and mechanics. Emphasis is on enemy detection, visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Fight should initiate with minimum 40nm separation and ROE not solved until WVR.

Performance Standards

Perform standardized tactical communications
Perform proper Air-to-Air sensor and weapon systems setup and usage
Perform tactical display management and interpretation
Perform proper signature management and 3D geometry
Perform proper mutual support and targeting
Perform proper intercept mechanics
Perform proper threat reactions
Perform Positive ID and ROE application
Perform effective WVR ACM and Communications
Perform valid weapons employment
Demonstrate effective countermeasures use

External Syllabus Support. Require 3 linked FMS with IP in lead FMS, evaluating IP at console, and additional IP flying as adversary.

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Prerequisite. ACM0276,ACM1514

ACM-1511 1.5 B E A D 2 F-35B

Event. ACM WVR 1

Requirements. Introduce WVR ACM setups and mechanics. Emphasis is on visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Engagements shall be commenced from visual sets (beam or stern).

Performance Standards

- Perform WVR ACM engagement set up procedures
- Perform effective WVR ACM and Communications
- Perform valid weapons employment
- Demonstrate effective countermeasures use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. Single Dissimilar Adversary Required

Prerequisite. ACM0511

ACM-1512 1.5 B,C,T,R E A D 2 F-35B

Event. ACM WVR 2

Requirements. Practice WVR ACM setups and mechanics. Emphasis is on visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Engagements shall be commenced from visual sets (beam or stern).

Performance Standards

- Perform WVR ACM engagement set up procedures
- Perform effective WVR ACM and Communications
- Perform valid weapons employment
- Demonstrate effective countermeasures use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. Single Dissimilar Adversary Required

Prerequisite. ACM1511 (B);ACM0511 (C,T,R)

ACM-1513 1.5 B E A D 2 F-35B

Event. ACM to Visual 1

Requirements. Introduce tap the cap setups and mechanics. Emphasis is on enemy detection, visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Fighters should be established on cap with unannounced engagements coming from forward, beam, and rear quarter.

Performance Standards

- Perform enemy detection (sensor and visual)

Perform Positive ID
Perform effective WVR ACM and Communications
Perform valid weapons employment
Demonstrate effective countermeasures use

Ordinance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. One or Two Dissimilar Adversaries Required. If multiple bandits are on station, no more than one will engage the fighters at a time.

Prerequisite. ACM0512

ACM-1514 1.5 B,C,T,R E A D 2 F-35B

Event. ACM to Visual 2

Requirements. Practice tap the cap setups and mechanics. Emphasis is on enemy detection, visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Fighters should be established on cap with unannounced engagements coming from forward, beam, and rear quarter.

Performance Standards

Perform enemy detection (sensor and visual)
Perform Positive ID
Perform effective WVR ACM and Communications
Perform valid weapons employment
Demonstrate effective countermeasures use

Ordinance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. One or Two Dissimilar Adversaries Required. If multiple bandits are on station, no more than one will engage the fighters at a time.

Prerequisite. ACM1513 (B);ACM0512 (C,T,R)

ACM-1515 1.5 B E A D 2 F-35B

Event. ACM BVR 1

Requirements. Introduce BVR to WVR ACM setups and mechanics. Emphasis is on enemy detection, visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Fight should initiate with minimum 40nm separation and ROE not solved until WVR.

Performance Standards

Perform standardized tactical communications
Perform proper Air-to-Air sensor and weapon systems setup and usage
Perform tactical display management and interpretation
Perform proper signature management and 3D geometry
Perform proper mutual support and targeting
Perform proper intercept mechanics

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Perform proper threat reactions
Perform Positive ID and ROE application
Perform effective WVR ACM and Communications
Perform valid weapons employment
Demonstrate effective countermeasures use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. AIC, One or Two Dissimilar Adversaries Required.
If multiple bandits are on station, no more than one will engage the fighters at a time.

Prerequisite. ACM0513

ACM-1516	1.5	B,C,T,R	E	A	D	2	F-35B
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Event. ACM BVR 2

Requirements. Practice BVR to WVR ACM setups and mechanics. Emphasis is on enemy detection, visual lookout, mutual support, clear and concise comm, flying best own ship BFM, and valid weapons employment with deconfliction and ROE solved. Fight should initiate with minimum 40nm separation and ROE not solved until WVR.

Performance Standards

Perform standardized tactical communications
Perform proper Air-to-Air sensor and weapon systems setup and usage
Perform tactical display management and interpretation
Perform proper signature management and 3D geometry
Perform proper mutual support and targeting
Perform proper intercept mechanics
Perform proper threat reactions
Perform Positive ID and ROE application
Perform effective WVR ACM and Communications
Perform valid weapons employment
Demonstrate effective countermeasures use

Ordnance. CATM-9X, 24 Flares

Range Requirements. ACM, MACH 1+, EXP

External Syllabus Support. AIC, One or Two Dissimilar Adversaries Required.
If multiple bandits are on station, no more than one will engage the fighters at a time.

Prerequisite. ACM1515 (B);ACM0513 (C,T,R)

2.6.13 AIR COMBAT TRAINING (AT) STAGE

2.6.13.1 Purpose. To introduce the employment of the F-35B in Offensive Anti-Air Warfare/Offensive Combat Air (OAAW/OCA) and Active Air Defense/Defensive Combat Air (AAD/DCA) missions.

2.6.13.2 General

a. An FRS IP shall instruct all flight events.

b. Emphasize mission planning, mutual support, knowledge of air-to-air weapons and tactics, signature management, sensor usage, mutual support, standardized communication, external support integration, timeline and situational awareness, and decision making.

c. AIC should be utilized to the maximum extent possible. If co-located with AIC controllers, a face-to-face brief and debrief should be conducted for all engagements.

2.6.13.3 Ground / Academic Training

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
AT	0280	OCA Tactics	2.5	X	X	X	X			
AT	0281	DCA Tactics	3.0	X	X	X	X			
AT	0282	F-35 Alert Scramble	1.0	X	X	X	X			
AT	0283	Red Air Tactics	2.5	X	X	X	X			

2.6.13.4 Simulator / Flight Events

AT-0601 1.5 B E S D 2 FMS

Event. Section Offensive Counter Air (OCA) Sweep 1

Requirement. Introduce Air Combat Tactics in an Offensive Counter Air (OCA) sweep role against an unknown number of adversaries.

Performance Standards

- Perform A/A concept planning
- Perform order of battle management planning
- Perform sweep Air-to-Air tactics
- Perform effective intercept mechanics and decision making
- Demonstrate proper mutual support
- Demonstrate proper targeting
- Demonstrate valid weapons employment

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AT0283

AT-0602 1.5 B,C,T,R E S D 2 FMS

Event. Section Offensive Counter Air (OCA) Sweep 2

Requirement. Practice Air Combat Tactics in an Offensive Counter Air (OCA) sweep role against an unknown number of adversaries.

Performance Standards

- Perform A/A concept planning
- Perform order of battle management planning
- Perform sweep Air-to-Air tactics
- Perform effective intercept mechanics and decision making
- Demonstrate proper mutual support

Demonstrate proper targeting
Demonstrate valid weapons employment

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AT0601 (B);AT0283 (C,T,R)

AT-0603 1.5 B E S D 2 FMS

Event. Section Defensive Counter Air (DCA) 1

Requirement. Practice Air Combat Tactics in a Defensive Counter Air (DCA) role against an unknown number of adversaries.

Performance Standards

Perform A/A concept planning
Perform order of battle management planning
Perform DCA Air-to-Air tactics
Perform effective intercept mechanics and decision making
Demonstrate proper mutual support
Demonstrate proper targeting
Demonstrate valid weapons employment

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AT1601

AT-0604 1.5 B,C,T,R E S D 2 FMS

Event. Section Defensive Counter Air (DCA) 2

Requirement. Practice Air Combat Tactics in a Defensive Counter Air (DCA) role against an unknown number of adversaries.

Performance Standards

Perform A/A concept planning
Perform order of battle management planning
Perform DCA Air-to-Air tactics
Perform effective intercept mechanics and decision making
Demonstrate proper mutual support
Demonstrate proper targeting
Demonstrate valid weapons employment

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AT0603 (B);AT1601 (C,T,R)

AT-0605 1.5 B,C,T,R E S D 4 FMS

Event. Division Defensive Counter Air (DCA)

Requirement. Practice Air Combat Tactics in a Defensive Counter Air (DCA) role against an unknown number of adversaries.

Performance Standards

Perform A/A concept planning

Perform order of battle management planning
Perform DCA Air-to-Air tactics
Perform effective intercept mechanics and decision making
Demonstrate proper mutual support
Demonstrate proper targeting
Demonstrate valid weapons employment

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. AT1602

AT-0606 1.5 B,C,T,R E S D 4 FMS

Event. Division Offensive Counter Air (OCA) Sweep

Requirement. Practice Air Combat Tactics in an Offensive Counter Air (OCA) sweep role against an unknown number of adversaries.

Performance Standards

Perform A/A concept planning
Perform order of battle management planning
Perform sweep Air-to-Air tactics
Perform effective intercept mechanics and decision making
Demonstrate proper mutual support
Demonstrate proper targeting
Demonstrate valid weapons employment

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. AT1603 (B);AT0605 (C,T,R)

AT-1601 1.5 B,C,T,R E A D 2 F-35B

Event. Section Offensive Counter Air (OCA) Sweep

Requirement. Practice Air Combat Tactics in an Offensive Counter Air (OCA) sweep role against an unknown number of adversaries.

Performance Standards

Perform A/A concept planning
Perform order of battle management planning
Perform sweep Air-to-Air tactics
Perform effective intercept mechanics and decision making
Demonstrate proper mutual support
Demonstrate proper targeting
Demonstrate valid weapons employment

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EW, EXP

External Syllabus Support. AIC, Minimum 4xDissimilar Adversaries Required.

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Prerequisite. AT0602

AT-1602 1.5 B,C,T,R E A D 2 F-35B

Event. Section Defensive Counter Air (DCA)

Requirement. Practice Air Combat Tactics in a Defensive Counter Air (DCA) role against an unknown number of adversaries.

Performance Standards

- Perform A/A concept planning
- Perform order of battle management planning
- Perform DCA Air-to-Air tactics
- Perform effective intercept mechanics and decision making
- Demonstrate proper mutual support
- Demonstrate proper targeting
- Demonstrate valid weapons employment

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EW, EXP

External Syllabus Support. AIC, Minimum 4xDissimilar Adversaries Required.

Prerequisite. AT0604

AT-1603 1.5 B E A D 4 F-35B

Event. Division Defensive Counter Air (DCA)

Requirement. Practice Air Combat Tactics in a Defensive Counter Air (DCA) role against an unknown number of adversaries.

Performance Standards

- Perform A/A concept planning
- Perform order of battle management planning
- Perform DCA Air-to-Air tactics
- Perform effective intercept mechanics and decision making
- Demonstrate proper mutual support
- Demonstrate proper targeting
- Demonstrate valid weapons employment

Ordnance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EW, EXP

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions. AIC, Minimum 4xDissimilar Adversaries Required.

Prerequisite. AT0605

AT-1604 1.5 B E A D 4 F-35B

Event. Division Offensive Counter Air (OCA) Sweep

Requirement. Practice Air Combat Tactics in an Offensive Counter Air (OCA) sweep role against an unknown number of adversaries.

Performance Standards

- Perform A/A concept planning
- Perform order of battle management planning
- Perform sweep Air-to-Air tactics
- Perform effective intercept mechanics and decision making
- Demonstrate proper mutual support
- Demonstrate proper targeting
- Demonstrate valid weapons employment

Ordinance. CATM-9X, 24 Flares

Range Requirements. AA, MACH 1+, EW, EXP

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions. AIC, Minimum 4xDissimilar Adversaries Required.

Prerequisite. AT0606

2.6.14 SUPPRESSION/DESTRUCTION OF ENEMY AIR DEFENSES (SEAD/DEAD) STAGE

2.6.14.1 Purpose. To introduce PVI, SEAD weapons, tactics, and F-35B capabilities of the Suppression / Destruction of Enemy Air Defenses (SEAD/DEAD)

2.6.14.2 General.

- a. An FRS IP shall instruct all flight events.
- b. Emphasize SEAD/DEAD weapon capabilities and limitations, designation techniques, delivery modes, attack parameters and signature management.

2.6.14.3 Ground / Academic Training

- a. Read JP3-13.1 Electronic Warfare.

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
SE	0285	Surface Threats	3.5	X	X	X	X			
SE	0286	Electronic Surveillance / Geolocation	1.5	X	X	X	X			
SE	0287	Surface Target Fusion	1.0	X	X	X	X			
SE	0288	Electronic Attack (A/S)	1.5	X	X	X	X			
SE	0289	Surface Threat Counter tactics	3.5	X	X	X	X			
SE	0290	EA PPT	1.5	X	X	X	X			
SE	0291	SEAD Tactics	2.5	X	X	X	X			
SE	0292	DEAD Tactics	2.5	X	X	X	X			
SE	0293	SEAD Mission Planning	3.5	X	X	X	X			

2.6.14.4 Simulator / Flight Events

SE-0701 1.5 B,C,T,R E S D 2 FMS

Event. Surface-to-Air Counter tactics

Requirement. Introduce Signature Management against surface threats. Demonstrate proficiency in SAM counter tactics. Practice Non-Sanctuary Tactics (NST) to transition to the low altitude environment when appropriate.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform appropriate radar SAM defense procedures
- Perform appropriate IR SAM defense procedures
- Perform appropriate AAA defense procedures
- Perform SEAD tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. NST1352,SE0290

SE-0702 1.5 B,C,T,R E S D 2 FMS

Event. Suppression of Enemy Air Defense (SEAD) 1

Requirement. Introduce section SEAD tactics, specifically CAP management, communication, awareness and prioritization of threats based on briefed timeline. Practice Signature Management against surface threats.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform SEAD tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. SE0293,SE0701

SE-0703 1.5 B E S D 2 FMS

Event. Suppression of Enemy Air Defense (SEAD) 2

Requirement. Practice section SEAD tactics, specifically CAP management, communication, awareness and prioritization of threats based on briefed timeline. Practice Signature Management against surface threats.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform SEAD tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. SE0702

SE-0704 1.5 B,C,T E S D 2 FMS

Event. Destruction of Enemy Air Defense (DEAD) 1

Requirement. Introduce section DEAD tactics. Practice communication and Signature Management against surface threats.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform SEAD tactics
- Perform DEAD tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. SE1701

SE-0705 1.5 B E S D 2 FMS

Event. Destruction of Enemy Air Defense (DEAD) 2

Requirement. Practice section DEAD tactics. Practice communication and Signature Management against surface threats.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform SEAD tactics
- Perform DEAD tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. SE0704

SE-0706 1.5 B,C,T,R E S D 4 FMS

Event. Division SEAD/DEAD

Requirement. Introduce division SEAD/DEAD tactics. Practice communication and Signature Management against surface threats.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform SEAD tactics
- Perform DEAD tactics

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. SE0705 (B);SE0704 (C,T);SE1701 (R)

SE-1701 1.5 B,C,T,R E A D 2 F-35B

Event. Section SEAD

Requirement. Introduce section SEAD tactics, specifically CAP management, communication, awareness and prioritization of threats based on briefed timeline. Practice Signature Management against surface threats.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform SEAD tactics

Ordinance. 1 x GBU-32 (Heavy Inert), 24 Flares

Range Requirements. RSTD, Hi Fi EW, IMC, COMPLEX, JDAM, HVY INERT, RDR TGT, IR TGT, EXP

External Syllabus Support. C2 Required.

Prerequisite. SE0703 (B);SE0702 (C,T,R)

SE-1702 1.5 B,C,T,R E A D 4 F-35B

Event. Division SEAD/DEAD

Requirement. Introduce division SEAD/DEAD tactics. Practice communication and Signature Management against surface threats.

Performance Standards

- Establish surface threat plan
- Perform Air-to-Surface signature management tactics
- Perform proper mutual support
- Perform SEAD tactics
- Perform DEAD tactics

Ordinance. 1 x GBU-32 (Heavy Inert), 24 Flares

Range Requirements. RSTD, Hi Fi EW, IMC, COMPLEX, JDAM, HVY INERT, RDR TGT, IR TGT, EXP

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions. C2 Required.

Prerequisite. SE0706

2.6.15 AERIAL INTERDICTION (AI) STAGE

2.6.15.1 Purpose. To introduce and develop proficiency in conducting Air Interdiction (AI) / Strike missions.

2.6.15.2 General

- a. An FRS IP shall instruct all flight events.
- b. Emphasize mission planning, tactical decision making, mutual support and target acquisition / destruction.

2.6.15.3 Ground / Academic Training

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
AI	0294	Off board Support Assets/Capabilities	2.0	X	X	X	X			
AI	0295	Strike Tactics	4.0	X	X	X	X			
AI	0296	Chemical/Biological Warfare	1.5	X	X	X	X			
AI	0297	Advanced Route Planning	3.0	X	X	X	X			
AI	0298	Mission Phase Test Review	2.0	X	X	X	X			
AI	0299	Mission Phase Test	1.5	X	X	X	X			

2.6.15.4 Simulator / Flight Events

AI-0711 1.5 B E S D 2 FMS

Event. Section Aerial Interdiction (AI) 1

Requirement. Execute a section opposed strike mission against stationary target(s) protected by surface threats and an unknown number of adversaries.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform AI tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AI0299

AI-0712 1.5 B,C,T,R E S D 2 FMS

Event. Section Aerial Interdiction (AI) 2

Requirement. Execute a section opposed strike mission against stationary target(s) protected by surface threats and an unknown number of adversaries.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform AI tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AI0711 (B);AI0299 (C,T,R)

AI-0713 1.5 B E S D 2 FMS

Event. Strike Contingencies

Requirement. Execute a section opposed strike mission against time sensitive, non-cooperative, moving target(s) protected by surface threats and an unknown number of adversaries.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning

Perform strike contingencies
Perform AI tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AI1711

AI-0714 1.5 B E S N 2 FMS

Event. Section Night Aerial Interdiction (AI)

Requirement. Execute a section opposed strike mission against stationary target(s) at night protected by surface threats and an unknown number of adversaries.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform tactical DAS/NVC usage
- Perform AI tactics

External Syllabus Support. Require 2 linked FMS with IP in lead FMS and evaluating IP at console.

Prerequisite. AI0713

AI-0715 1.5 B,C,T,R E S D 4 FMS

Event. Division Strategic Attack

Requirement. Introduce division deep interdiction against enemy tactical formations and capabilities. The enemy tactical formations are deployed with organic surface-to air defenses, tactical SAM and AAA. Air defense fighters may be employed in defense of enemy surface forces.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform AI tactics

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. AI1712 (B);AI1711 (C,T,R)

AI-0716 1.5 B,C,T E S D 4 FMS

Event. Division Night Strategic Attack

Requirement. Introduce division deep interdiction against enemy tactical formations and capabilities at night. The enemy tactical formations are deployed with organic surface-to air defenses, tactical SAM and AAA. Air defense fighters may be employed in defense of enemy surface forces.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform tactical DAS/NVC usage
- Perform AI tactics

External Syllabus Support. Require 4 linked FMS with IPs in lead FMS, dash 3 position, and evaluating IP at console. 2 students may fly in this event in the dash 2 and 4 positions.

Prerequisite. AI0715

AI-1711 1.5 B,C,T,R E A D 2 F-35B

Event. Section Aerial Interdiction

Requirement. Execute a section opposed strike mission against stationary target(s) protected by surface threats and an unknown number of adversaries.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform AI tactics

Ordnance. 1 x GBU-32 (Heavy Inert), CATM-9X+, 24 Flares

Range Requirements. RSTD, AA, MACH 1+, Hi Fi EW, IMC, COMPLEX, JDAM, HVY INERT, RDR TGT, IR TGT, EXP

External Syllabus Support. AIC, Minimum 2xDissimilar Adversaries Required.

Prerequisite. AI0712

AI-1712 1.5 B E A N 2 F-35B

Event. Section Night Aerial Interdiction

Requirement. Execute a section opposed strike mission at night against stationary target(s) protected by surface threats and an unknown number of adversaries.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform AI tactics

Ordnance. 1 x GBU-32 (Heavy Inert), CATM-9X+, 24 Flares

Range Requirements. RSTD, AA, MACH 1+, Hi Fi EW, IMC, COMPLEX, JDAM, HVY INERT, RDR TGT, IR TGT, EXP

External Syllabus Support. AIC, Minimum 2xDissimilar Adversaries Required.

Prerequisite. AI0714

AI-1713 1.5 B,C,T E A D 4 F-35B

Event. Division Strategic Attack

Requirement. Introduce division deep interdiction against enemy tactical formations and capabilities. The enemy tactical formations are deployed with organic surface-to air defenses, tactical SAM and AAA. Air defense fighters may be employed in defense of enemy surface forces.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform AI tactics

Ordnance. 1 x GBU-12 (Heavy Inert), CATM-9X+, 24 Flares

Range Requirements. RSTD, AA, MACH 1+, Hi Fi EW, IMC, COMPLEX, LGB, HVY INERT, RDR TGT, IR TGT, EXP

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions. AIC, Minimum 2xDissimilar Adversaries Required.

Prerequisite. AI0715

AI-1714 1.5 B,C,T,R E A D 4 F-35B

Event. Division Strategic Attack (Class Strike)

Requirement. Practice division deep interdiction against enemy tactical formations and capabilities. The enemy tactical formations are deployed with organic surface-to air defenses, tactical SAM and AAA. Air defense fighters may be employed in defense of enemy surface forces.

Performance Standards

- Perform A/S and A/A concept planning
- Perform route planning
- Perform strike contingencies
- Perform AI tactics

Ordnance. 1 x GBU-12 (HE) or 1 x GBU-32 (HE), CATM-9X+, 24 Flares

Range Requirements. RSTD, AA, MACH 1+, Hi Fi EW, IMC, COMPLEX, JDAM or LGB, HE, RDR TGT, IR TGT, EXP

External Syllabus Support. Require 2 IPs to lead and fly in the dash 3 position. 2 students may fly in this event in the dash 2 and 4 positions. AIC, Minimum 2xDissimilar Adversaries Required.

Prerequisite. AI1713 (B,C,T);AI0715 (R)

2.6.16 FORWARD OPERATING BASE (FOB) STAGE

2.6.16.1 Purpose. To introduce pilots to operations at airfields away from home field and/or in theatre.

2.6.16.2 General

- a. An FRS IP and LSO shall instruct all flight events.

b. Emphasis on FOB procedures

2.6.16.3 Ground / Academic Training

- a. Read NAVAIR 00-80-T-115, Expeditionary Airfields.
- b. Read Marine Corps Air Stations NATOPS Manual.

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
FOB	0080	Variant Specific Phase Brief	1.0	X	X	X	X			
FOB	0081	FOB	2.0	X	X	X	X			
FOB	0082	Variant Specific Phase Test Review	1.5	X	X	X	X			
FOB	0083	Variant Specific Phase Test	1.5	X	X	X	X			

2.6.16.4 Simulator / Flight Events

FOB-0901 1.5 B,C,T,R E S D 1 FMS

Event. Forward Operating Base (FOB)

Requirement. Introduce day Forward Base Operations (FOB) procedures.

Performance Standards

- Perform local FOB course rules and considerations
- Perform FOB STO/RVL/VL
- Perform Confined area Landings (CAL) procedures
- Perform FOB deck procedures
- Perform F-35B FOB contingencies

Prerequisite. FOB0083

FOB-0902 1.5 B,C,T E S N 1 FMS

Event. Night Forward Operating Base (FOB)

Requirement. Introduce night Forward Base Operations (FOB) procedures.

Performance Standards

- Perform local FOB course rules and considerations
- Perform FOB STO/RVL/VL
- Perform Confined area Landings (CAL) procedures
- Perform FOB deck procedures
- Perform F-35B FOB contingencies

Prerequisite. FOB0901

FOB-1901 0.8 B,C,T,R E A D 1 F-35B

Event. Forward Operating Base (FOB)

Requirement. Practice day Forward Base Operations (FOB) procedures.

Performance Standards

- Perform standardized communications.
- Demonstrate sound ORM
- Perform FOB STO/RVL/VL
- Perform Confined area Landings (CAL) procedures

Perform FOB deck procedures

Ordinance. NA

Range Requirements. NA

External Syllabus Support. LSO

Prerequisite. FOB0901

FOB-1902 0.8 B,C,T E A N 1 F-35B

Event. Night Forward Operating Base (FOB)

Requirement. Practice night Forward Base Operations (FOB) procedures.

Performance Standards

- Perform standardized communications.
- Demonstrate sound ORM Perform FOB deck procedures
- Perform FOB STO/RVL/VL

Ordinance. N/A

Range Requirements. N/A

External Syllabus Support. LSO

Prerequisite. FOB0902

2.6.17 FIELD CARRIER LANDING PRACTICE (FCLP) STAGE

2.6.17.1 Purpose. Introduce procedures for day and night carrier operations aboard an L-Class vessel.

2.6.17.2 General

- a. An FRS LSO shall instruct all flight events.
- b. Emphasis on STOVL shipboard procedures and operations.
- c. All events shall be conducted at a simulated L-Class ship equipped with an optical landing system

2.6.17.3 Ground / Academic Training

- a. Read STOVL Shipboard and LSO NATOPS Manual.
- b. Read LHA/LHD/MCS NATOPS Manual.

STAGE	EVENT	DESCRIPTION	TIME	B	C	T	R	MR	SS	SC
FCLP	0084	Shipboard Principles	0.8	X	X	X	X			
FCLP	0085	FCLP (Day)	1.5	X	X	X	X			
FCLP	0086	FCLP (Night)	1.0	X	X	X	X			
FCLP	0087	CQ Operations (Day)	1.8	X	X	X	X			
FCLP	0088	CQ Operations (Night)	1.7	X	X	X	X			
FCLP	0089	CQ Operations (Case III)	1.3	X	X	X	X			

2.6.17.4 Simulator / Flight Events

FCLP-0911 1.5 B,C,T,R E S D 1 FMS

Event. Day Field Carrier Landing Practice

Requirement. Introduce Field Carrier Landing Practice and L-Class Shipboard Operations for day Case I, II, and III operations.

Performance Standards

- Perform day LHA FCLP departure/arrival procedures
- Perform LSO voice command directives
- Perform day LHA FCLP landing procedures
- Perform F-35B L-class launch procedures
- Perform F-35B L-class departure procedures
- Perform F-35B L-class recovery procedures
- Perform F-35B L-class Case II recovery procedures
- Perform F-35B L-class Case III recovery procedures
- Perform F-35B L-class recovery procedures
- Perform F-35B L-class shipboard contingencies day
- Perform F-35B L-class landing procedures
- Perform F-35B L-class shipboard contingencies day

Prerequisite. FCLP-0085

FCLP-0912 1.5 B,C,T E S N 1 FMS

Event. Night Field Carrier Landing Practice

Requirement. Introduce Field Carrier Landing Practice and L-Class Shipboard Operations at night.

Performance Standards

- Perform day LHA FCLP departure/arrival procedures
- Perform LSO voice command directives
- Perform night LHA FCLP landing procedures
- Perform F-35B L-class launch procedures
- Perform F-35B L-class departure procedures
- Perform F-35B L-class recovery procedures
- Perform F-35B L-class Case III recovery procedures
- Perform F-35B L-class recovery procedures
- Perform F-35B L-class shipboard contingencies day
- Perform F-35B L-class landing procedures
- Perform F-35B L-class shipboard contingencies day

Prerequisite. FCLP-0086,FCLP1912

FCLP-1911 0.8 B,C,T,R E A D 1 F-35B

Event. Day Field Carrier Landing Practice 1

Requirement. Introduce day Case I Field Carrier Landing Practice.

Performance Standards

- Perform LSO voice command directives

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- Perform F-35B FCLP launch procedures
- Perform F-35B FCLP departure procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP shipboard contingencies
- Perform F-35B FCLP landing procedures

Ordinance. N/A

Range Requirements. FCLP LHA PAD

External Syllabus Support. LSO

Prerequisite. FCLP-0911

FCLP-1912 0.8 B,C,T E A D 1 F-35B

Event. Day Field Carrier Landing Practice 2

Requirement. Practice day Case I/II/III Field Carrier Landing Practice.

Performance Standards

- Perform LSO voice command directives
- Perform day LHA FCLP landing procedures
- Perform F-35B FCLP launch procedures
- Perform F-35B FCLP departure procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP Case II recovery procedures
- Perform F-35B FCLP Case III recovery procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP shipboard contingencies
- Perform F-35B FCLP landing procedures

Ordinance. N/A

Range Requirements. FCLP LHA PAD

External Syllabus Support. LSO

Prerequisite. FCLP-1911

FCLP-1913 0.8 B,C,T E A N 1 F-35B

Event. Night Field Carrier Landing Practice 1

Requirement. Introduce night Field Carrier Landing Practice.

Performance Standards

- Perform LSO voice command directives
- Perform F-35B FCLP launch procedures
- Perform F-35B FCLP departure procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP shipboard contingencies
- Perform F-35B FCLP landing procedures

Ordinance. N/A

Range Requirements. FCLP LHA PAD

External Syllabus Support. LSO

Prerequisite. FCLP-0912

FCLP-1914 0.8 B,C,T E A N 1 F-35B

Event. Night Field Carrier Landing Practice 2

Requirement. Practice night Field Carrier Landing Practice.

Performance Standards

- Perform LSO voice command directives
- Perform day LHA FCLP landing procedures
- Perform F-35B FCLP launch procedures
- Perform F-35B FCLP departure procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP recovery procedures
- Perform F-35B FCLP shipboard contingencies
- Perform F-35B FCLP landing procedures

Ordnance. N/A

Range Requirements. FCLP LHA PAD

External Syllabus Support. LSO

Prerequisite. FCLP-1913

2.7 INSTRUCTOR TRAINING. In Development.

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2.8 F-35B 1000 PHASE T&R MATRIX

F-35B 1000 PHASE T&R MATRIX																												
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS							ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	MIP	OF	GAIN	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT	CONV	
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME	#	TIME												
CORE INTRODUCTION (1000 PHASE)																												
FAMILIARIZATION (FAM)																												
FAM	FAM	WELCOME & IN PROCESSING	0001	X	X	X	X	X	X			1.0						G				NONE						0001
	FAM	INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITARS)	0002	X	X	X	X	X	X			1.0						G										0008
	FAM	ALIS	0003	X	X	X	X	X	X			2.5						G										0010
	FAM	SECURITY BRIEFING	0004	X	X	X	X	X	X			4.0						G										0002
	FAM	COURSE OVERVIEW	0005	X	X	X	X	X	X			1.0						G										0003
	FAM	TRANSITION PHASE BRIEF	0006	X	X	X	X	X	X			1.0						G										0004
	FAM	TRAINING FACILITY TOUR	0007	X	X	X	X	X	X			1.0						G										0005
	FAM	LIFE SUPPORT FITTING	0008	X	X	X	X	X	X			2.0						G										0006
	FAM	LIFE SUPPORT FITTING II	0009	X	X	X	X	X	X			4.0						G										0007
	FAM	LOCAL AREA SURVIVAL	0010	X	X	X	X	X	X			1.0						G										0009
	FAM	F-35 AIRCRAFT INTRO & OVERVIEW	0011	X	X	X	X	X	X			2.0						G										0015
	FAM	F-35 PUBLICATIONS AND REFERENCES	0012	X	X	X	X	X	X			1.5						G										0016
	FAM	PILOT TRAINING AID (PTA) INTRODUCTION	0013	X	X	X	X	X	X			1.0						G										0017
	FAM	VEHICLE SYSTEMS PROCESSING (VSP)	0014	X	X	X	X	X	X			1.0						G										
	FAM	PANORAMIC COCKPIT DISPLAY (PCD)	0015	X	X	X	X	X	X			2.0						G										0018
	FAM	HMD	0016	X	X	X	X	X	X			1.5						G										0019
	FAM	HOTAS	0017	X	X	X	X	X	X			1.5						G										0020
	FAM	PCD, HOTAS, VR	0018	X	X	X	X	X	X			1.5						G										0022
	FAM	PRACTICE PCD, HOTAS, VR	0019	X	X	X	X	X	X			1.5						G										0023
	FAM	INTEGRATED CAUTION ADVISORY WARNING SYSTEM	0020	X	X	X	X	X	X			1.5						G										0024
	FAM	ELECTRICAL POWER SYSTEM (EPS)	0021	X	X	X	X	X	X			2.5						G										0025
	FAM	POWER AND THERMAL MANAGEMENT SYSTEM (PIMS)	0022	X	X	X	X	X	X			2.0						G										0026
	FAM	ENGINE SYSTEM	0023	X	X	X	X	X	X			4.0						G										0027
	FAM	FUEL SYSTEM	0024	X	X	X	X	X	X			2.0						G										0028
	FAM	FIRE PROTECTION SYSTEM	0025	X	X	X	X	X	X			2.0						G										0029
	FAM	LIGHTING SYSTE,	0026	X	X	X	X	X	X			1.0						G										0030
	FAM	HYDRAULIC SYSTEM	0027	X	X	X	X	X	X			2.0						G										0031
	FAM	LANDING GEAR SYSTEM	0028	X	X	X	X	X	X			3.0						G										0032
	FAM	CANOPY SYSTEM	0029	X	X	X	X	X	X			1.0						G										0033
	FAM	EGRESS SYSTEM / SURVIVAL EQUIPMENT	0030	X	X	X	X	X	X			2.0						G										0034
	FAM	LIFE SUPPORT SYSTEM	0031	X	X	X	X	X	X			1.0						G										0035
	FAM	TRANSITION PHASE TEST I REVIEW	0032	X	X	X	X	X	X			2.0						G										0047
	FAM	TRANSITION PHASE TEST I (SYSTEMS)	0033	X	X	X	X	X	X			1.5						G										0048
	FAM	FLIGHT CONTROL SYSTEM (FCS)	0034	X	X	X	X	X	X			3.5						G										0036
	FAM	CNI 1 (UHF/VHF, IFF, DATA LINKS)	0035	X	X	X	X	X	X			2.0						G										0037
	FAM	CNI 2 NAVIGATION	0036	X	X	X	X	X	X			3.0						G										0038

F-35B 1000 PHASE T&R MATRIX																								
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS						ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	# OF	OR	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT CONV
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME	#									
CORE INTRODUCTION (1000 PHASE)																								
FAM		VOICE RECOGNITION	0037	X	X	X	X	X	X		1.5						G							0021
FAM		TACTICAL SITUATION DISPLAY (TSD)	0038	X	X	X	X	X	X		1.5						G							0039
FAM		AUTOPILOT/FLIGHT MANAGEMENT SYSTEM	0039	X	X	X	X	X	X		2.0						G							0040
FAM		OPERATING LIMITATIONS	0040	X	X	X	X	X	X		1.5						G							0041
FAM		PRE-FLIGHT & POST-FLIGHT PROCEDURES	0041	X	X	X	X	X	X		1.5						G							0042
FAM		NORMAL OPERATING PROCEDURES	0042	X	X	X	X	X	X		4.5						G							0043
FAM		LOCAL AREA PROCEDURES	0043	X	X	X	X	X	X		1.0						G							0044
FAM		BASIC DISPLAY MANAGEMENT/CHECKLISTS	0044	X	X	X	X	X	X		1.5						G							0045
FAM		OPERATING PROCEDURES	0045	X	X	X	X	X	X		1.5						G							0046
FAM		INSTRUMENT PROCEDURES AND TEST	0046	X	X	X	X	X	X		8.0						G							0200
FAM		INSTRUMENT FLIGHT PROCEDURES	0047	X	X	X	X	X	X		3.0						G							0201
FAM		RADAR SYSTEM 1 - RADAR THEORY & APG-81 RADAR SYSTEM	0048	X	X	X	X	X	X		2.5						G							0059
FAM		ADMINISTRATIVE MISSION PLANNING	0049	X	X	X	X	X	X		2.5						G							0058
FAM		TRANSITION PHASE TEST 2 REVIEW	0050	X	X	X	X	X	X		2.0						G							0054
FAM		TRANSITION PHASE TEST 2 (EP/BOLDFACE)	0051	X	X	X	X	X	X		1.5						G							0055
FAM		SMS	0052	X	X	X	X	X	X		1.0						G							0056
FAM		PROGNOSTICS AND HEALTH MANAGEMENT (PHM) SYSTEM	0053	X	X	X	X	X	X		1.0						G							0057
FAM		CRM	0054	X	X	X	X	X	X		2.0						G							0049
FAM		EMERGENCIES 1 (GROUND)	0055	X	X	X	X	X	X		4.0						G							0050
FAM		EMERGENCIES 2 (TAKEOFF)	0056	X	X	X	X	X	X		4.0						G							0051
FAM		EMERGENCIES 3 (INFLIGHT)	0057	X	X	X	X	X	X		3.5						G							0052
FAM		EMERGENCIES 4 (APPROACH/LANDING)	0058	X	X	X	X	X	X		4.0						G							0053
FAM		BASIC IR THEORY / DAS AND NVC	0059	X	X	X	X	X	X		2.5						G							0060
FAM		CROSS COUNTRY OPERATIONS	0060	X	X	X	X	X	X		1.0						G							0061
FAM		TRANSITION PHASE TEST 3 REVIEW	0061	X	X	X	X	X	X		2.0						G							0062
FAM		TRANSITION PHASE TEST 3 (SYSTEMS)	0062	X	X	X	X	X	X		1.5						G							0063
FAM		NATOPS TESTS	0063	X	X	X	X	X	X		1.5						G							
FAM		HUMAN FACTORS	0064	X	X	X	X	X	X		1.5						G							
FAM		NIGHT SYSTEMS AND OPERATIONS	0065	X	X	X	X	X	X		2.0						G							0064
FAM		NIGHT LAB	0066	X	X	X	X	X	X		3.0						G							0065
FAM		COURSE CRITIQUE	0999	X	X	X	X	X	X		1.5						G							0067
FAM		Egress Training	0099	X	X	X	X	X	X				2.5			D	S/A	1			0033			0100
FAM		Device Orientation	0100	X	X	X	X	X	X				2.0			D	S	1			0051			
FAM		Normal Operations 1	0101	X	X	X	X	X	X				1.5			D	S	1			0100,0033~(MR/SC)			0101
FAM		Normal Operations 2	0102	X	X	X	X	X	X				1.5			D	S	1			0101			
FAM		Instrument Flight 1	0111	X	X	X	X	X	X				1.5			D	S	1			0047,0102~(B/C/T/R/SS) ,0101~ MR			0210
FAM		Normal Operations 3	0103	X									1.5			D	S	1			0111			
FAM		Emergency Procedures 1	0131	X	X	X	X	X	X				1.5			D	S	1			0062,0103~B,0111~(C/T/R/MR/SS), 0101~SC			0103
FAM		STOVL Pattern 1	0141	X	X	X	X	X	X				1.5			D	S	1			0131			0106
FAM		Emergency Procedures 2	0132	X	X	X	X	X	X				1.5			D	S	1			0141~(B,C,T,R,MR,SC) ,0131~SS			0104
FAM		Normal Operations 4	0104	X									1.5			D	S	1			0132			

F-35B 1000 PHASE T&R MATRIX																								
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS							ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	# OF CLIM	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT CONV
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME	#	TIME								
CORE INTRODUCTION (1000 PHASE)																								
FAM		STOVL Pattern 2	0142	X	X	X	X			X			1.5			D	S	1		0104-B ,0132~ (C/T/R/SC)			0111	
FAM		STOVL Emergency Procedures	0143	X	X	X	X	X		X			1.5			D	S	1		0142~ (B/C/T/R/SC) ,0132~MR			0112	
FAM		Emergency Procedures 3	0133	X	X	X	X		X				1.5			D	S	1		0143~ (B/C/T/R/MR) ,0132~SS			0105	
FAM		Emergency Procedures 4	0134	X	X	X	X		X				1.5			D	S	1		0133			0108	
FAM		Emergency Procedures 5	0135	X	X	X	X	X	X	X			1.5			D	S	1		0134~ (B/C/T/R/SS) ,0143~ (MR/SC)			0109	
FAM		Normal Operations 5	0105	X									1.5			D	S	1		0135				
FAM		Emergency Procedures 6	0136	X	X	X	X	X	X				1.5			D	S	1		0105-B,0135~ (C/T/R/MR/SS)			0110	
FAM		Emergency Procedures 7	0137	X	X	X	X	X	X				1.5			D	S	1		0136			0113	
FAM		Instrument Flight 2	0112	X									1.5			D	S	1		0137			0210	
FAM		Emergency Procedures Validation	0138	X	X	X	X	X	X	X			1.5			D	S	1		0112~B,0137~ (C/T/R/MR/SS) ,0135~SC			X 0114	
FAM		Supervised Ground Operations	1100	X	X	X			X					1.0		D	A	1		0138			X 0150	
FAM		First Flight Rehearsal	0106	X	X	X	X	X	X	X			1.5			D	S	1		1100~ (B/C/T/SS) ,0138~ (R/MR/SC)			X 0115	
FAM		Normal Operations, Instruments 1 (Chased)	1101	X	X	X	X	X	X	X				1.5		D	A	2		0106			X 0151	
FAM		Normal Operations, Instruments 2 (Chased)	1102	X										1.5		D	A	2		1101			X 0152	
FAM		Normal Operations, Instruments 3 (Chased)	1103	X										1.5		D	A	2		1102			X	
FAM		Normal Operations, Instruments 4 (Chased)	1104	X										1.5		D	A	2		1103			X	
FAM		Normal Operations, Instruments and Formation 2	1105		X	X	X	X	X	X						D	A	2		0068,1101			X 0155	
FAM		Normal Operations, Instruments and Formation 3	1106		X	X	X		X							D	A	2		1105			X	
FAM		Normal Operations, Instruments and Formation 4	1107		X	X	X		X							D	A	2		1106			X	
FAM		STOVL Pattern 4	0144	X	X	X	X	X		X			1.5			D	S	1		1104~B,1105~ (C/T/R/MR/SC)			X	
FAM		STOVL Pattern 1	1141	X	X	X	X	X		X				0.8		D	A	1		0144			X 0153	
FAM		STOVL Pattern 2	1142	X	X	X	X	X		X				0.8		D	A	1		1141			X 0154	
FAM		STOVL Pattern 3	1143	X										0.8		D	A	1		1142			X	
FAM		Pre-Instrument Checkride	0113	X									1.5			D/N	S	1		1143			X	
FAM		Instrument Checkride	0114	X	X	X	X	X	X				1.5			D/N	S	1		0113~B,1107~ (C/T/R/SS) ,1105~MR			X 0212	
FAM		Pre-NATOPS Check	0190	X	X	X							1.5			D	S	1		1152~B,0114~ (C/T)				
FAM		NATOPS Check	0191	X	X	X	X	X	X	X			1.5			D	S	1		(0063,0190)~ (B/C/T) , (0063,0114)~ (R/MR/SS) , (0063,1142)~ (SC)	>10 HOURS FLIGHT TIME ALSO REQUIRED		X 0120	
FAM		Night Operations	0161	X									1.5			N	S	1		0066,0191			X	
FAM		Night STOVL Pattern 1	0145	X	X	X	X	X		X			1.5			N	S	1		0161~B, (0066,0191)~ (C/T/R/MR/SC)			X 0122	
FAM		Night Operations, Section Formation	0162	X	X	X	X	X					1.5			N	S	2		0069,0145			X 0121	
FAM		Night Operations, Instruments, Section Formation 1	1161	X	X	X	X	X					1.5			N	A	2		0114,0162			X 0158	
FAM		Night Operations, Instruments, Section Formation 2	1162	X										1.5		N	A	2		1161			X	
FAM		Night STOVL Pattern 2	0146	X	X	X	X	X		X			1.5			N	S	1		1162~B,1161~ (C/T/R/MR) ,0145~SC			X	
FAM		Night STOVL Pattern 1	1144	X	X	X	X	X		X				0.8		N	A	1		0146			X 0159	
FAM		Night STOVL Pattern 2	1145	X										0.8		N	A	1		1144			X	
FAM TOTAL									67	140.0	30	46.5	12	14.0										

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F-35B 1000 PHASE T&R MATRIX																										
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS					ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	# OF	OR	C/TM	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT	CONV	
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME												#
CORE INTRODUCTION (1000 PHASE)																										
FORMATION (FORM)																										
FORM	FORM	Section Formation	0151	X											D	S	2			0067,1143		X	0310			
	FORM	Division Formation	0152	X											D	S	4			0151		X				
	FORM	Section Formation	1151	X										1.5	D	A	2			0151		X	0320			
	FORM	Division Formation	1152	X										1.5	D	A	4			0152,1151		X				
	FORM	Night Division Formation	0163	X										1.5	N	S	4			1162		X				
	FORM	Night Division Formation	1163	X										1.5	N	A	4			0163		X				
FORM TOTAL									0	0.0	3	4.5	3	4.5												
AERIAL REFUELING (AAR)																										
AAR	AAR	Air Refueling Academics	0070	X	X	X	X						2.0							1152			0900			
	AAR	Day/Night AR	0171	X	X	X	X						1.5		(N)	S	1	TEN		0070						
	AAR	Air Refueling	1171	X	X	X	X							1.5	D	A	2			0171		X	0920			
	AAR	Night AR (Section)	1172	X	X	X	X							1.5	N	A	2			1163,1171		X	0921			
AAR TOTAL									1	2.0	1	1.5	2	3.0												

F-35B 1000 PHASE T&R MATRIX																											
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS							ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	# OF	OR	C/T/R	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT CONV	
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME	#	TIME											
CORE INTRODUCTION (1000 PHASE)																											
AIR-TO SURFACE (AS)																											
AS	AS	A/S Phase Brief	0201	X	X	X	X											G				1163				0400	
	AS	F-35 A/S Missions	0202	X	X	X	X												G								0401
	AS	A/S Symbology and Display mgmt	0203	X	X	X	X												G								0402
	AS	Basic Air-to-Surface PTT	0204	X	X	X	X												G								
	AS	Radar System 2, Active A/S Radar Modes	0205	X	X	X	X												G								0403
	AS	SAR Map Theory, Pilot Techniques & Procedures	0206	X	X	X	X												G								0404
	AS	TFLIR/LASER	0207	X	X	X	X												G								0405
	AS	TFLIR/DAS/NVC A/S Interp	0208	X	X	X	X												G								0406
	AS	Laser Guided Bombs	0209	X	X	X	X												G								0407
	AS	GPS Guided Bombs	0210	X	X	X	X												G								0410
	AS	Small Diameter Bomb	0211	X	X	X	X												G								
	AS	Weaponering / Ballistic Weapons Planner	0212	X	X	X	X												G								0409
	AS	PGMPS	0213	X	X	X	X												G								0411
	AS	Bomb Hit Assessment (BHA)	0214	X	X	X	X												G								
	AS	Basic Air-to-Surface Target Engagement	0215	X	X	X	X												G								0413
	AS	Visual Target Engagement and Dive Deliveries	0216	X	X	X	X												G								
	AS	Range Operations and Procedures	0217	X	X	X	X												G								0412
	AS	Night A/S Employment	0218	X	X	X	X												G								0418
	AS	A/S Phase Test I Review	0219	X	X	X	X												G								0414
	AS	A/S Phase Test I	0220	X	X	X	X												G								0415
	AS	GAU-22/A Gun System	0221	X	X	X	X												G								0408
	AS	Strafe Fundamentals	0222	X	X	X	X												G								0417
	AS	A/S Phase Test 2 Review	0238	X	X	X	X												G								0419
AS	A/S Phase Test 2 (Recce, CAS, Night)	0239	X	X	X	X												G								0420	
AS	SAR Map/GGW Deliveries (Single Ship)	0301	X										1.5			D	S	1			0220				0431		
AS	SAR Map/GGW Deliveries (SEC)	0302	X	X	X	X							1.5			D	S	2			0301~B, 0220~ (C/T/R/MR)			X			
AS	SAR Map/GGW Deliveries	1301	X	X	X	X								1.5		D	A	2			0302			X	0440		
AS	TFLIR/LGB Deliveries (Single Ship)	0303	X										1.5			D	S	1			0220				0430		
AS	TFLIR/LGB Deliveries (Section)	0304	X	X	X	X							1.5			D	S	2			0303~B, 0220~ (C/T/R/MR)			X			
AS	TFLIR/LGB Deliveries	1302	X	X	X	X								1.5		D	A	2			0304			X			
AS	Division SAR Map / TFLIR Employment (Division)	1303	X	X	X	X								1.5		D	A	4			1301, 1302			X	0441		
AS	Day A/S Strafe	0311	X	X	X	X							1.5			D	S	1	TEN+		0222, 1303				0433		
AS	Day A/S Strafe	1311	X	X	X	X								1.5		D	A	2			0311				0442		
AS	Night Strafe	0312	X	X	X	X							1.5			N	S	1	TEN+		0311				0435		
AS TOTAL									24	53.5	6	9.0	4	6.0													

F-35B 1000 PHASE T&R MATRIX																										
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS					ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	#	OF	C/T/R	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT	CONV	
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME												#
CORE INTRODUCTION (1000 PHASE)																										
ARMED RECONNAISSANCE (AR)																										
AR	AR	Armed Reconnaissance	0225	X	X	X	X								G					1303						
	AR	AR (Section)	0321	X	X	X	X								D	S	2		TEN+	0225			X		0610	
	AR	AR (Section)	1321	X	X	X	X								D	A	2			0321			X		0620	
	AR	AR (Division)	0322	X											D	S	4			1321			X			
	AR	AR (Division)	1322	X											D	A	4			0322			X			
	AR	Night AR (Section)	0323	X	X	X	X								N	S	2		TEN+	1322~B,1321~(C/T/R/MR)			X			
	AR	Night AR (Section)	1323	X	X	X	X								N	A	2			0323			X			
AR TOTAL									1	3.0	3	4.5	3	4.5												
CLOSE AIR SUPPORT (CAS)																										
CAS	CAS	Close Air Support	0230	X	X	X	X								G					1323					0700	
	CAS	CAS Controls and Displays	0231	X	X	X	X								G											0701
	CAS	CAS Techniques and procedures	0232	X	X	X	X								G											0702
	CAS	Urban CAS	0233	X	X	X	X								G											0703
	CAS	CAS (Single Ship)	0331	X	X	X	X								D	S	1		TEN	0232			X		0710	
	CAS	CAS (Section)	0332	X	X	X	X								D	S	2		TEN	0331~(B/T/C/R),0232~MR			X			
	CAS	Digital CAS (Section)	0333	X											(N)	S	2		TEN+	0332			X			
	CAS	Close Air Support (Chased)	1331	X	X	X	X								D	A	2			0333~B,0332,(C/T/R)			X		0720	
	CAS	Close Air Support (Section)	1332	X	X	X	X								D	A	2			1331~(B/C/T/R),0332~MR			X		0721	
	CAS	Urban CAS (Section)	0334	X											(N)	S	2		TEN+	0233,0332			X		0713	
	CAS	Night CAS (Section)	0335	X	X	X	X								N	S	2		TEN+	1332			X		0711	
CAS	Night CAS (Section)	1333	X	X	X	X								N	A	2			0335			X		0722		
CAS TOTAL									4	9.5	5	7.5	3	4.5												
NON-SANCTUARY TACTICS (NST)																										
NST	NST	NST Fundamentals	0235	X	X	X	X								G					1305						
	NST	Low Altitude Intercepts	0236	X	X	X	X								G											
	NST	NST Basics	0351	X	X	X	X								D	S	1			0235			X			
	NST	NST Basics (Chased)	1351	X	X	X	X								D	A	2			0351			X			
	NST	NST Basics (Section)	0352	X	X	X	X								D	S	2			1351,1408,0236			X			
	NST	NST Basics (Section)	1352	X	X	X	X								D	A	2			0352			X			
NST TOTAL									2	3.0	2	3.0	2	3.0												

F-35B 1000 PHASE T&R MATRIX																										
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS						ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	#	OF	C/T/R	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT CONV	
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME	#											TIME
CORE INTRODUCTION (1000 PHASE)																										
(TI)																										
TI	TI	A/A Phase Brief	0240	X	X	X	X														1163				0800	
	TI	F-35 Fighter Combat Missions	0241	X	X	X	X	X																		0801
	TI	Radar Systems 3 (A/A Tact Modes)	0242	X	X	X	X	X																		0803
	TI	EOTS (A/A)	0243	X	X	X	X	X																		0802
	TI	A/A TSD Procedures	0244	X	X	X	X	X																		0804
	TI	CNI 3 Advanced Communications	0245	X	X	X	X	X																		0805
	TI	Battle Space Knowledge	0246	X	X	X	X	X																		
	TI	Air Threats	0247	X	X	X	X	X																		0810
	TI	Electronic Warfare Systems	0248	X	X	X	X	X																		0811
	TI	Electronic Support Measures	0249	X	X	X	X	X																		0812
	TI	Air Track Fusion	0250	X	X	X	X	X																		0813
	TI	Threat Warning Display (TWD)	0251	X	X	X	X	X																		0814
	TI	Low Observable Fundamentals	0252	X	X	X	X	X																		0815
	TI	Countermeasures	0253	X	X	X	X	X																		0816
	TI	Electronic Attack (A/A)	0254	X	X	X	X	X																		0817
	TI	AIM-120 AMRAAM	0255	X	X	X	X	X																		0808
	TI	Air Threat Counter Tactics	0256	X	X	X	X	X																		0818
	TI	Basic Intercepts	0257	X	X	X	X	X																		0819
	TI	Advanced Intercepts (lvX)	0258	X	X	X	X	X																		0820
	TI	A/A Mission Planning	0259	X	X	X	X	X																		0821
	TI	Tactical Intercepts (TI) Part Task Training	0260	X	X	X	X	X																		0822
	TI	A/A Phase Test 1 Review	0261	X	X	X	X	X																		0823
	TI	A/A Phase Test 1 (Systems, Weapons, Countermeasures)	0262	X	X	X	X	X																		0824
	TI	Section TI Tactics	0263	X	X	X	X	X																		0825
	TI	Night Air to Air Employment	0264	X	X	X	X	X																		0827
	TI	Division TI Tactics	0265	X	X	X	X	X																		0826
	TI	A/A Phase Test 2 Review	0266	X	X	X	X	X																		0828
	TI	A/A Phase Test 2 (BFM, ACM, TI)	0267	X	X	X	X	X																		0829
	TI	lv1 Basic Intercepts 1	0401	X										1.5			D	S	1	TEN	0257				0840	
	TI	lv1 Basic Intercepts 2	0402	X										1.5			D	S	1	TEN	0401				0841	
TI	lv1 Basic Intercepts 3	0403	X	X	X	X	X						1.5			D	S	1	TEN	0402~B, 0257~(C/T/R), 0241~MR				0842		
TI	lv1 Basic Intercepts 1	1401	X											1.5		D	A	2		0403			X	0850		
TI	lv1 Basic Intercepts 2	1402	X											1.5		D	A	2		1401			X	0851		
TI	lvX Advanced Intercepts 1	0404	X										1.5			D	S	1	TEN+	0262, 1402			X	0843		
TI	lvX Advanced Intercepts 2	0405	X										1.5			D	S	1	TEN+	0404			X	0843		
TI	lvX Advanced Intercepts 3	0406	X	X	X	X	X						1.5			D	S	1	TEN+	0405~B, (0262, 0403)~(C/T/R/MR)			X	0844		
TI	lv1 Advanced Intercepts 1	1403	X											1.5		D	A	2		0406			X	0852		
TI	lv1 Advanced Intercepts 2	1404	X	X	X	X	X							1.5		D	A	2		1403~B, 0406~(C/R/T/MR)			X	0853		

F-35B 1000 PHASE T&R MATRIX																									
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS					ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	# OF	OR	C/T/M	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT	CONV
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME											
CORE INTRODUCTION (1000 PHASE)																									
TI		1vl Advanced Intercepts 3	1405	X	X	X	X							1.5	D	A	2			1404		X		0853	
TI		2vX Tactical Intercepts 1	0407	X									1.5		D	S	2	TEN+	0267			X		0844	
TI		2vX Tactical Intercepts 2	0408	X	X	X	X	X					1.5		D	S	2	TEN+	0407~B, 0267~ (C/T/R/MR)			X		0845	
TI		2vX Tactical Intercepts 1	1406	X										1.5	D	A	2			0408		X		0852	
TI		2vX Tactical Intercepts 2	1407	X	X	X	X	X						1.5	D	A	2			1406~B, 0408~ (C/T/R/MR)		X		0853	
TI		2vX Tactical Intercepts 3	0409	X	X	X	X						1.5		D	S	2	TEN+	1407		X		0845		
TI		2vX Tactical Intercepts 3	1408	X	X	X	X							1.5	D	A	2			0409		X		0852	
TI		Night 1vl Tactical Intercepts	0410	X	X	X	X						1.5		N	S	1	TEN+	1405			X		0847	
TI		Night 1vl Tactical Intercepts	1409	X	X	X	X							1.5	N	A	2			0410		X		0856	
TI		Night 2vX Tactical Intercepts	0411	X	X	X	X						1.5		N	S	2	TEN+	1408, 1409			X		0847	
TI		Night 2vX Tactical Intercepts	1410	X	X	X	X							1.5	N	A	2			0411		X		0856	
TI		2vX Tactical Intercepts Contingencies	0412	X									1.5		D	S	2	TEN+	1410			X		0845	
TI		2vX Tactical Intercepts Contingencies	1411	X										1.5	D	A	2			0412		X		0852	
TI		4 v X Tactical Intercepts 1	0413	X									1.5		D	S	4	TEN+	1411		X		0846		
TI		4 v X Tactical Intercepts 1	1412	X										1.5	D	A	4			0413		X		0855	
TI		4 v X Tactical Intercepts 2	0414	X	X	X	X	X					1.5		D	S	4	TEN+	1412~B, 1410~ (C/T/R), 1407~MR			X		0846	
TI		4 v X Tactical Intercepts 2	1413	X	X	X	X	X						1.5	D	A	4			0414		X		0855	
TI TOTAL								28	62.5	14	21.0	13	19.5												

F-35B 1000 PHASE T&R MATRIX																												
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS						ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	#	OF	C/T/R	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT	CONV		
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME	#												TIME	
CORE INTRODUCTION (1000 PHASE)																												
BASIC FIGHTER MANEUVERS (BFM)																												
BFM	BFM	Advanced Handling	0270	X	X	X	X									G					1413							
	BFM	Visual Wpns Envelopes/Employment	0271	X	X	X	X									G												1001
	BFM	Offensive BFM	0272	X	X	X	X									G												1002
	BFM	Defensive BFM	0273	X	X	X	X									G												1003
	BFM	High Aspect BFM	0274	X	X	X	X									G												1004
	BFM	Advanced Handling	0501	X	X	X	X						1.5			D	S	1				0271				X	1010	
	BFM	Advanced Handling	1501	X	X	X	X							1.5		D	A	2				0501				X	1020	
	BFM	Offensive BFM	0502	X	X	X	X						1.5			D	S	2		TEN+		0272, 1501~ (B,C,T,R)				X	1011	
	BFM	Offensive BFM 1	1502	X										1.5		D	A	2				0502				X	1021	
	BFM	Offensive BFM 2	1503	X	X	X	X							1.5		D	A	2				1502~B, 0502~ (C/T/R)				X	1021	
	BFM	Offensive BFM 3	1504	X	X	X	X							1.5		D	A	2				1503, 0502~MR				X	1021	
	BFM	Defensive BFM	0503	X	X	X	X						1.5			D	S	2		TEN+		0273, 1504~ (B,C,T,R)				X	1012	
	BFM	Defensive BFM 1	1505	X										1.5		D	A	2				0503				X	1022	
	BFM	Defensive BFM 2	1506	X	X	X	X							1.5		D	A	2				1505~B, 0503~ (C/T/R)				X	1022	
	BFM	Defensive BFM 3	1507	X	X	X	X							1.5		D	A	2				1506~ (B/T/C/R), 0503~MR				X	1022	
	BFM	High Aspect BFM	0504	X	X	X	X						1.5			D	S	2		TEN+		0274, 1507~ (B/T/C/R)				X		
BFM	High Aspect BFM 1	1508	X										1.5		D	A	2				0504				X	1023		
BFM	High Aspect BFM 2	1509	X	X	X	X							1.5		D	A	2				1508, 0504~ (C/T/R)				X	1024		
BFM	High Aspect BFM 3	1510	X	X	X	X							1.5		D	A	2				1509~ (B/T/C/R), 0504~MR				X			
BFM TOTAL									5	10.0	4	6.0	10	15.0														
AIR COMBAT MANEUVERS (ACM)																												
ACM	ACM	WVR ACM Concepts & Communications	0275	X	X	X	X						1.5				G					1510				X	1100	
	ACM	BVR ACM Concepts & Communications	0276	X	X	X	X						1.5													X	1101	
	ACM	ACM WVR	0511	X	X	X	X						1.5			D	S	3		TEN+		0275				X		
	ACM	ACM WVR 1	1511	X										1.5		D	A	2				0511				X		
	ACM	ACM WVR 2	1512	X	X	X	X							1.5		D	A	2				1511~B, 0511~ (C/T/R)				X		
	ACM	ACM to Visual	0512	X	X	X	X							1.5		D	S	3		TEN+		1512				X	1110	
	ACM	ACM to Visual 1	1513	X										1.5		D	A	2				0512				X	1120	
	ACM	ACM to Visual 2	1514	X	X	X	X							1.5		D	A	2				1513~B, 0512~ (C/T/R)				X	1120	
	ACM	ACM BVR	0513	X	X	X	X							1.5		D	S	3		TEN+		0276, 1514				X		
	ACM	ACM BVR 1	1515	X										1.5		D	A	2				0513				X		
ACM	ACM BVR 2	1516	X	X	X	X							1.5		D	A	2				1515~B, 0513~ (C/T/R)				X			
ACM TOTAL									2	3.0	3	4.5	6	9.0														

F-35B 1000 PHASE T&R MATRIX																											
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS					ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	#	Or	CLM	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT CONV			
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME											#	TIME	
CORE INTRODUCTION (1000 PHASE)																											
(AT)																											
AT	AT	OCA Tactics	0280	X	X	X	X																	1201			
	AT	DCA Tactics	0281	X	X	X	X																		1202		
	AT	F-35 Alert Scramble	0282	X	X	X	X																		1203		
	AT	Red Air Tactics	0283	X	X	X	X																		1204		
	AT	2vX OCA 1	0601	X											D	S	2		TEN+	0283				X	1210		
	AT	2vX OCA 2	0602	X	X	X	X								D	S	2		TEN+	0601~B,0283~(C/T/R)				X	1210		
	AT	2vX OCA	1601	X	X	X	X								D	A	2			0602				X	1220		
	AT	2vX DCA 1	0603	X											D	S	2		TEN+	1601				X	1211		
	AT	2vX DCA 2	0604	X	X	X	X								D	S	2		TEN+	0603~B,1601~(C/T/R)				X	1211		
	AT	2vX DCA	1602	X	X	X	X								D	A	2			0604				X	1221		
	AT	4vX DCA	0605	X	X	X	X								D	S	4		TEN+	1602				X	1213		
	AT	4vX DCA	1603	X											D	A	4			0605				X	1222		
	AT	4vX OCA	0606	X	X	X	X								D	S	4		TEN+	1603~B,0605~(C/T/R)				X	1212		
AT	4vX OCA	1604	X											D	A	4			0606				X				
AT TOTAL									4	9.0	6	9.0	4	6.0													
(SE)																											
SE	SE	Surface Threats	0285	X	X	X	X																		1300		
	SE	Electronic Surveillance / Geolocation	0286	X	X	X	X																			1302	
	SE	Surface Target Fusion	0287	X	X	X	X																			1303	
	SE	Electronic Attack (A/S)	0288	X	X	X	X																			1304	
	SE	Surface Threat Countertactics	0289	X	X	X	X																			1301	
	SE	EA PPT	0290	X	X	X	X																			1308	
	SE	SEAD Tactics	0291	X	X	X	X																			1305	
	SE	DEAD Tactics	0292	X	X	X	X																				1306
	SE	SEAD Mission Planning	0293	X	X	X	X																				1307
	SE	Surface-to-Air Countertactics	0701	X	X	X	X								D	S	2		TEN+	1352,0290						1320	
	SE	SEAD 1	0702	X	X	X	X								D	S	2		TEN+	0293,0701				X	1321		
	SE	SEAD 2	0703	X											D	S	2		TEN+	0702				X	1322		
	SE	Section SEAD	1701	X	X	X	X								D	A	2			0703~B,0702~(C/T/R)				X	1330		
	SE	DEAD 1	0704	X	X	X	X								D	S	2		TEN+	1701				X	1323		
	SE	DEAD 2	0705	X											D	S	2		TEN+	0704				X	1323		
	SE	Division DEAD/SEAD	0706	X	X	X	X								D	S	4		TEN+	0705~B.0704~(C/T),1701~R				X	1323		
	SE	Division DEAD/SEAD	1702	X	X	X	X								D	A	4			0706				X	1331		
SEAD TOTAL									9	21.0	6	9.0	2	3.0													

F-35B 1000 PHASE T&R MATRIX																									
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS					ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	#	OF	C/T/R	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT CONV	
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME											#
CORE INTRODUCTION (1000 PHASE)																									
(AI)																									
AI	AI	Off board Support Assets/Capabilities	0294	X	X	X	X													1702				1400	
	AI	Strike Tactics	0295	X	X	X	X																		1401
	AI	Chemical/Biological Warfare	0296	X	X	X	X																		1402
	AI	Advanced Route Planning	0297	X	X	X	X																		1403
	AI	Mission Phase Test Review	0298	X	X	X	X																		1404
	AI	Mission Phase Test	0299	X	X	X	X																		1405
	AI	Section Interdiction	0711	X									1.5			D	S	2	TEN	0299				X	
	AI	Section Interdiction	0712	X	X	X	X						1.5			D	S	2	TEN	0711~B, 0299~ (C/T/R)				X	
	AI	Section Interdiction	1711	X	X	X	X							1.5		D	A	2		0712				X	1420
	AI	Strike Contingencies	0713	X									1.5			D	S	2	TEN	1711				X	1410
	AI	Section Night AI	0714	X									1.5			N	S	2	TEN	0713				X	1411
	AI	Section Night Interdiction	1712	X										1.5		N	A	2		0714				X	1421
	AI	Division Strategic Attack	0715	X	X	X	X						1.5			D	S	4	TEN+	1712~B, 1711~ (C/T/R)				X	
	AI	Division Strategic Attack	1713	X	X	X								1.5		D	A	4		0715				X	
AI	Division Night Strategic Attack	0716	X	X	X							1.5			N	S	4	TEN+	0715				X	1413	
AI	4 Ship Strategic Attack (Class Strike)	1714	X	X	X	X							1.5		D	A	4		1713~(B, /C/T), 0715~R				X	1422	
AI TOTAL									6	14.0	6	9.0	4	6.0											
(FOB)																									
FOB	FOB	Variant Specific Phase Brief	0080	X	X	X	X					1.0								1145				X	1500
	FOB	FOB	0081	X	X	X	X					2.0												X	1501
	FOB	Variant Specific Phse Test Rev	0082	X	X	X	X					1.5												X	1502
	FOB	Variant Specific Phase Test	0083	X	X	X	X					1.5												X	1503
	FOB	FOB	0901	X	X	X	X					1.5			D	S	1			0083				X	1510
	FOB	FOB	1901	X	X	X	X							0.8		D	A	1		0901				X	1520
	FOB	Night FOB	0902	X	X	X						1.5				N	S	1		0901				X	1511
	FOB	Night FOB	1902	X	X	X								0.8		N	A	1		0902				X	1521
FOB TOTAL									4	6.0	2	3.0	2	1.6											

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F-35B 1000 PHASE T&R MATRIX																									
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS					ACADEMIC		SIMULATOR		FLIGHTS		COND	TYPE	#	OF	CLIM	Notes	PREREQUISITE	PREREQUISITE NOTES	MIP	EVENT	CONV
				B	C	T	R	MR	SS	SC	#	TIME	#	TIME											
CORE INTRODUCTION (1000 PHASE)																									
(FCLP)																									
FCLP	FCLP	Shipboard Principles	0084	X	X	X	X													1145			X	1700	
	FCLP	FCLP (Day)	0085	X	X	X	X																X	1600	
	FCLP	FCLP (Night)	0086	X	X	X	X																X	1601	
	FCLP	CQ Operations (Day)	0087	X	X	X	X																X	1701	
	FCLP	CQ Operations (Night)	0088	X	X	X	X																X	1702	
	FCLP	CQ Ops (Case III)	0089	X	X	X	X																X	1703	
	FCLP	FCLP-L	0911	X	X	X	X						1.5			D	S	1			0085		X	1610	
	FCLP	FCLP-L	1911	X	X	X	X									D	A	1			0911		X	1620	
	FCLP	FCLP-L	1912	X	X	X										D	A	1			1911		X	1621	
	FCLP	Night FCLP-L	0912	X	X	X							1.5			N	S	1			0086,1912		X	1611	
	FCLP	Night FCLP-L	1913	X	X	X										N	A	1			0912		X	1622	
FCLP	Night FCLP-L	1914	X	X	X										N	A	1			1913		X	1623		
FCLP-L TOTAL									6	8.1	2	3.0	4	3.2											
TOTAL 1000 PHASE									163	344.6	93	141.0	74	102.8											

2.8.1 F-35B 1000 PHASE RANGE AND ORDNANCE MATRIX

F-35B 1000 PHASE RANGE AND ORDNANCE MATRIX																		
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS						COND	TYPE	# A/C	ORDNANCE	ORDNANCE QUANTITY	RANGE	RANGE NOTES	EXTERNAL SYLLABUS SUPPORT	EXTERNAL SYLLABUS NOTES
				B	C	T	R	MR	SS									
CORE INTRODUCTION (1000 PHASE)																		
FAMILIARIZATION (FAM)																		
FAM	FAM	Supervised Ground Operations	1100	X	X	X			X		D	A	1					
	FAM	Normal Ops, Instruments 1 (Chased)	1101	X	X	X	X	X	X	X	D	A	2		RSTD, MOA		LSO	
	FAM	Normal Ops, Instruments 2 (Chased)	1102	X							D	A	2		RSTD, MOA		LSO	
	FAM	Normal Ops, Instruments 3 (Chased)	1103	X							D	A	2		RSTD, MOA		LSO	
	FAM	Normal Ops, Instruments 4 (Chased)	1104	X							D	A	2		RSTD, MOA		LSO	
	FAM	Normal Ops, Inst & FORM 2	1105		X	X	X	X	X	X	D	A	2		RSTD, MOA		LSO	
	FAM	Normal Ops, Inst & FORM 3	1106		X	X	X		X		D	A	2		RSTD, MOA		LSO	
	FAM	Normal Ops, Inst & FORM 4	1107		X	X	X		X		D	A	2		RSTD, MOA		LSO	
	FAM	STOVL Pattern 1	1141	X	X	X	X	X		X	D	A	1				LSO	
	FAM	STOVL Pattern 2	1142	X	X	X	X	X		X	D	A	1				LSO	
	FAM	STOVL Pattern 3	1143	X							D	A	1				LSO	
	FAM	Night Ops, Inst, Sec FORM 1	1161	X	X	X	X	X			N	A	2		RSTD, MOA		LSO	
	FAM	Night Ops, Inst, Sec FORM 2	1162	X							N	A	2		RSTD, MOA		LSO	
	FAM	Night STOVL Pattern 1	1144	X	X	X	X	X		X	N	A	1				LSO	
FAM	Night STOVL Pattern 2	1145	X							N	A	1				LSO		
FORMATION (FORM)																		
FORM	FORM	Section Formation	1151	X						D	A	2		RSTD, MOA				
	FORM	Division Formation	1152	X						D	A	4		RSTD, MOA				
	FORM	Night Division Formation	1163	X							N	A	4		RSTD, MOA			
AERIAL REFUELING (AAR)																		
AAR	AAR	Air Refueling	1171	X	X	X	X			D	A	2		RSTD, MOA	AAR		1 x TANKER	
	AAR	Night AR (Section)	1172	X	X	X	X			N	A	2		RSTD, MOA	AAR		1 x TANKER	
AIR-TO SURFACE (AS)																		
AS	AS	SAR Map/GGW Deliveries	1301	X	X	X	X	X		D	A	2	JDAM, HVY INERT, EXP	1xGBU32	RSTD	RKD RNG / TGTLRSR, IR TGT, RDR TGT, WISS		
	AS	TFLIR/LGB Deliveries	1302	X	X	X	X	X		D	A	2	LGB, HVY INERT, EXP	1xGBU12	RSTD	RKD RNG / TGTLRSR, IR TGT, RDR TGT, WISS		
	AS	Div SAR Map / TFLIR Employment	1303	X	X	X	X	X		D	A	4	LGB, JDAM, HVY INERT, EXP	1xGBU12 1xGBU32	RSTD	RKD RNG / TGTLRSR, IR TGT, RDR TGT, WISS		
	AS	Day A/S Strafe	1311	X	X	X	X	X		D	A	2	25MM	200RD	RSTD	RKD RNG, LSR, STRAFE, WISS		

F-35B 1000 PHASE RANGE AND ORDNANCE MATRIX																		
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS						COND	TYPE	# A/C	ORDNANCE	ORDNANCE QUANTITY	RANGE	RANGE NOTES	EXTERNAL SYLLABUS SUPPORT	EXTERNAL SYLLABUS NOTES
				B	C	T	R	MR	SS									
CORE INTRODUCTION (1000 PHASE)																		
ARMED RECONNAISSANCE (AR)																		
AR	AR	AR (Section)	1321	X	X	X	X	X		D	A	2			RSTD,MOA	EW, IR TGT, RDR TGT, MOCK, TGT-MOVE		
	AR	AR (Division)	1322	X						D	A	4			RSTD,MOA	EW, IR TGT, RDR TGT, MOCK, TGT-MOVE		
	AR	Night AR (Section)	1323	X	X	X	X	X		N	A	2	LGB, JDAM, HVY INERT, EXP	1xGBU12 1xGBU32	RSTD	RKD RNG / TGTLSR, IR TGT, RDR TGT, WISS		
CLOSE AIR SUPPORT (CAS)																		
CAS	CAS	Close Air Support (Chased)	1331	X	X	X	X			D	A	2	LGB, JDAM, HVY INERT, 25MM, EXP	1xGBU12 1xGBU32 200RD	RSTD	COMPLEX / IR TGT / RDR TGT LSR, STRAFE	FAC(A) / FAC / JTAC	
	CAS	Close Air Support (Section)	1332	X	X	X	X	X		D	A	2	LGB, JDAM, HVY INERT, 25MM, EXP	1xGBU12 1xGBU32 200RD	RSTD	COMPLEX / IR TGT / RDR TGT LSR, STRAFE	FAC(A) / FAC / JTAC	
	CAS	Night CAS (Section)	1333	X	X	X	X			N	A	2	LGB, JDAM, HVY INERT, 25MM, EXP	1xGBU12 1xGBU32 200RD	RSTD	COMPLEX / IR TGT / RDR TGT LSR, STRAFE	FAC(A) / FAC / JTAC	
NON-SANCTUARY TACTICS (NST)																		
NST	NST	NST Basics (Chased)	1351	X	X	X	X			D	A	2			MOA, MTR			
	NST	NST Basics (Section)	1352	X	X	X	X			D	A	2			AA, LAT	EXP	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
(TI)																		
TI	TI	1v1 Basic Intercepts 1	1401	X						D	A	2	CATM9X+	1	AA, MACH1+			
	TI	1v1 Basic Intercepts 2	1402	X						D	A	2	CATM9X+	1	AA, MACH1+			
	TI	1v1 Advanced Intercepts 1	1403	X						D	A	2	CATM9X+	1	AA, MACH1+			
	TI	1v1 Advanced Intercepts 2	1404	X	X	X	X	X		D	A	2	CATM9X+	1	AA, MACH1+			
	TI	1v1 Advanced Intercepts 3	1405	X	X	X	X			D	A	2	CATM9X+	1	AA, MACH1+			
	TI	2vX Tactical Intercepts 1	1406	X						D	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
	TI	2vX Tactical Intercepts 2	1407	X	X	X	X	X		D	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
	TI	2vX Tactical Intercepts 3	1408	X	X	X	X			D	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
	TI	Night 1v1 Tactical Intercepts	1409	X	X	X	X			N	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP		
	TI	Night 2vX Tactical Intercepts	1410	X	X	X	X			N	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP	AIC, 2 x ADVERSARY	Night Capable, Dissimilar Adversary Required
	TI	2vX Tactical Intercepts Contingencies	1411	X						D	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
TI	4 v X Tactical Intercepts 1	1412	X						D	A	4	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP	AIC, 4 x ADVERSARY	Dissimilar Adversary Required	
TI	4 v X Tactical Intercepts 2	1413	X	X	X	X	X		D	A	4	CATM9X+, EXP	1	AA, MACH1+	ACM, EXP	AIC, 4 x ADVERSARY	Dissimilar Adversary Required	
BASIC FIGHTER MANEUVERS (BFM)																		
BFM	BFM	Advanced Handling	1501	X	X	X	X			D	A	2	CATM9X+, EXP		ACM, MACH1+	ACM		

F-35B 1000 PHASE RANGE AND ORDNANCE MATRIX																		
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS						COND	TYPE	# A/C	ORDNANCE	ORDNANCE QUANTITY	RANGE	RANGE NOTES	EXTERNAL SYLLABUS SUPPORT	EXTERNAL SYLLABUS NOTES
				B	C	T	R	MR	SS									
CORE INTRODUCTION (1000 PHASE)																		
	BFM	Offensive BFM 1	1502	X						D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	Offensive BFM 2	1503	X	X	X	X			D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	Offensive BFM 3	1504	X	X	X	X	X		D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	Defensive BFM 1	1505	X						D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	Defensive BFM 2	1506	X	X	X	X			D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	Defensive BFM 3	1507	X	X	X	X	X		D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	High Aspect BFM 1	1508	X						D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	High Aspect BFM 2	1509	X	X	X	X			D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
	BFM	High Aspect BFM 3	1510	X	X	X	X	X		D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP		
AIR COMBAT MANEUVERS (ACM)																		
	ACM	ACM WVR 1	1511	X						D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP	1 x ADVERSARY	Dissimilar Adversary Required
	ACM	ACM WVR 2	1512	X	X	X	X			D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP	1 x ADVERSARY	Dissimilar Adversary Required
	ACM	ACM to Visual 1	1513	X						D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP	AIC, 1 x ADVERSARY	Dissimilar Adversary Required
	ACM	ACM to Visual 2	1514	X	X	X	X			D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP	AIC, 1 x ADVERSARY	Dissimilar Adversary Required
	ACM	ACM BVR 1	1515	X						D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP	AIC, 1 x ADVERSARY	Dissimilar Adversary Required
	ACM	ACM BVR 2	1516	X	X	X	X			D	A	2	CATM9X+, EXP	1	ACM, MACH1+	ACM, EXP	AIC, 1 x ADVERSARY	Dissimilar Adversary Required
(AT)																		
	AT	2vX OCA	1601	X	X	X	X			D	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EW, EXP	AIC, 4 x ADVERSARY	Dissimilar Adversary Required
	AT	2vX DCA	1602	X	X	X	X			D	A	2	CATM9X+, EXP	1	AA, MACH1+	ACM, EW, EXP	AIC, 4 x ADVERSARY	Dissimilar Adversary Required
	AT	4vX DCA	1603	X						D	A	4	CATM9X+, EXP	1	AA, MACH 1+	ACM, EW, EXP	AIC, 4 x ADVERSARY	Dissimilar Adversary Required
	AT	4vX OCA	1604	X						D	A	4	CATM9X+, EXP	1	AA, MACH 1+	ACM, EW, EXP	AIC, 4 x ADVERSARY	Dissimilar Adversary Required
(SE)																		
	SE	Section SEAD	1701	X	X	X	X			D	A	2	JDAM, HVY INERT, EXP	1xGBU32	RSTD	HI FI EW, RDR TGT, IR TGT, EXP, IMC, COMPLEX	C2	
	SE	Division DEAD/SEAD	1702	X	X	X	X			D	A	4	JDAM, HVY INERT, EXP	1xGBU32	RSTD	HI FI EW, RDR TGT, IR TGT, EXP, IMC, COMPLEX	C2	
(AI)																		
	AI	Section Interdiction	1711	X	X	X	X			D	A	2	JDAM, HVY INERT, EXP	CATM9X+, 1xGBU32	AA, RSTD, MACH1+	HI FI EW, RDR TGT, IR TGT, EXP, IMCCOMPLEX, AIC	AIC, 2 x ADVERSARY	
	AI	Section Night Interdiction	1712	X						N	A	2	JDAM, HVY INERT, EXP	CATM9X+, 1xGBU32	AA, RSTD, MACH1+	HI FI EW, RDR TGT, IR TGT, EXP, IMCCOMPLEX, AIC	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
	AI	Division Strategic Attack	1713	X	X	X				D	A	4	LGB, HVY INERT, EXP	CATM9X+, 1xGBU12	AA, RSTD, MACH1+	HI FI EW, RDR TGT, IR TGT, EXP, IMCCOMPLEX, AIC	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
	AI	4 Ship Strategic Attack (Class Strike)	1714	X	X	X	X			D	A	4	JDAM/ LGB, HE, EXP	CATM9X+, 1xGBU32 or 1xGBU12	AA, RSTD, MACH1+	HI FI EW, RDR TGT, IR TGT, EXP, IMCCOMPLEX, AIC	AIC, 2 x ADVERSARY	Dissimilar Adversary Required
(FOB)																		

F-35B 1000 PHASE RANGE AND ORDNANCE MATRIX																				
SKILL	STAGE	T&R DESCRIPTION	T&R CODE	SYLLABUS								COND	TYPE	# A/C	ORDNANCE	ORDNANCE QUANTITY	RANGE	RANGE NOTES	EXTERNAL SYLLABUS SUPPORT	EXTERNAL SYLLABUS NOTES
				B	C	T	R	MR	SS	SC										
CORE INTRODUCTION (1000 PHASE)																				
FOB	FOB	FOB	1901	X	X	X	X				D	A	1					LSO		
	FOB	Night FOB	1902	X	X	X					N	A	1					LSO		
(FCLP)																				
FCLP	FCLP	FCLP-L	1911	X	X	X	X				D	A	1			FCLP LHA		LSO		
	FCLP	FCLP-L	1912	X	X	X					D	A	1			FCLP LHA		LSO		
	FCLP	Night FCLP-L	1913	X	X	X					N	A	1			FCLP LHA		LSO		
	FCLP	Night FCLP-L	1914	X	X	X					N	A	1			FCLP LHA		LSO		

2.9 TRAINING DEVICE EVENT ESSENTIAL SUBSYSTEM MATRIX (EESM)

2.9.1 Introduction. Events designated by an "S" in the event header shall be flown /conducted in a training device equipped to meet the objectives listed in the event description; each event requires specific simulator capabilities. For each individual event, a simulator is categorized as Full Mission Capable (FMC), Partial Mission Capable (PMC), or Non-Mission Capable (NMC) based on the status of essential simulator subsystems. The following definitions apply:

2.9.1.1 FMC. All simulator subsystems required to meet the training objectives for the event to be flown / conducted are installed and operating properly.

2.9.1.2 PMC. A simulator subsystem or capability considered highly desirable, but not essential, to meet the training objectives is not installed or is not operating properly. While the event can still be completed, the quality of training is degraded.

2.9.1.3 NMC. The device lacks the capability to complete the event due to a critical subsystem or capability being inoperative or not installed. A simulator will be considered NMC if its configuration is greater than 3 months out of date as compared with the current aircraft / system configuration.

2.9.2 Completion of an event in a PMC simulator shall be noted on the ATF with a description of the impact to training. Commanding officers shall be notified of all scheduled events in NMC simulators. Each commanding officer should notify DC/Aviation APW-71/APC (Info appropriate MCI/MARCORBASE, CG TECOM ATB, and PMA-205[MARFED]) by DMS message (via the applicable chain of command) when NMC simulators due to aircraft configuration changes occur for greater than 6 months or when, in the commanding officer's judgment, the NMC rate has had an adverse effect on the squadron's ability to train.

2.9.3 Simulator EESM Application. The matrix below illustrates how the absence of a particular simulator subsystem or capability affects simulator MC status for each training event in this Manual. All simulator events will be completed in an FMC or a PMC simulator as determined by the EESM. Completion of an event in a PMC simulator shall be noted on the ATF with a description of the impact to training. Under no circumstances will an event be completed in a device determined to be NMC for that event without the approval of the commanding officer.

Failed / Absent Subsystem	NMC for:	PMC for:
Aural	All Events	
HMD	All Events	
Day Visual	All Day Events	
Night Visual	All Night Events	
Recording and Debrief Playback		All Events
STOVL Landing Aids		All STOVL Events including FAM, INST, FOB, FCLP, CQ
Electronic Flight Instrument / Standby Flight Display	All FAM events requiring instrument approaches	All FAM and FORM events
Voice Recognition		All FAM, FORM, and INST events
COMM (HQ, Secure, MADL, LINK Voice)	All tactical events requiring advanced COMM	All linked simulator events
SAR MAP	All events requiring GGW deliveries	All AS, AR, CAS, NST, SE, AI
TFLIR / Laser, LDT, IR Marker	All events requiring LGB deliveries	All AS, AR, CAS, NST, SE, AI
AMRAAM	All TI, BFM, ACM, AT, SE, AI. All NST events with intercepts.	FORM events requiring Non- Visual Formation
9X	All TI, BFM, ACM, AT, SE, AI. All NST events with intercepts.	FORM events requiring Non- Visual Formation
JDAM	All events requiring GGW deliveries	
LGB	All events requiring LGB deliveries	
SDB	TBD (Expected same events as JDAM)	TBD (Expected same events as JDAM)
Gun	All events requiring strafe or A/A gun usage	
EOTS / IRST (A/A)		All TI, ACM, AT, SE, AI
360 DAS		All Events
NVC	All NS mandatory events	All NS optional events
DAS Missile Warning		All Events
AGR	All events requiring strafe	All AS, AR, CAS, NST, SE, AI
MADL/Link16	All linked simulator events requiring mutual support	All linked simulator events
VMF Strike		All AR, CAS
Countermeasures	All tactical events	
APG-81/MFA	All tactical events	All non-tactical events
RW/ESM	All tactical events	
Enhanced Geolocation		All tactical events

APPENDIX A

ANNUAL NATOPS CHECK

Description: The annual NATOPS Check event is the flight evaluation intended to candidly assess every pilot's knowledge and adherence to NATOPS/FSD publications. The evaluation flight will also serve as the method to complete the NATOPS/FSD oral examination and annual CRM evaluation. The flight evaluation should be flown in the simulator in accordance with one of the attached scenarios. To ensure compliance with the OPNAV 3710.7 series, the event must be logged properly with the following code: T&R Code of FAM-0191 and TMR Code of 2L4.

Purpose: To provide a standardized annual NATOPS Check flight evaluation profile that facilitates a comprehensive evaluation of knowledge and adherence to the OPNAVINST 3710.7 series, F-35B NATOPS/FSD, and current SOPs.

Sortie Objectives:

- Evaluate the PUI's systems knowledge and capability to safely operate the aircraft in all phases of flight.
- Evaluate the PUI on adherence to the OPNAV 3710 series, NATOPS/FSD and current SOPs.
- Demonstrate proficiency in the various types of takeoffs and landings. At a minimum, the following takeoffs shall be evaluated: CTO, STO, VTO. At a minimum, the following landings shall be evaluated: CL, SL, VL. At least one landing should be from an SFO/FO profile.
- Evaluate compliance with NATOPS/FSD procedures for emergency scenarios. At least one emergency shall require extensive crew coordination, to allow for a full evaluation of all CRM skills. CRM shall be evaluated throughout the course of the flight where applicable.
- At some point during the sortie, the PUI should be placed in an ejection dilemma.

Guidance: The PUI shall have current annual CRM ground training and complete the open and closed book examinations required by OPNAV3710.7 series prior to the simulator event. The simulator brief shall be tailored appropriately to concurrently meet the oral examination requirement. The standard simulator timeline should be extended as required to allow for adequate evaluation of NATOPS/FSD knowledge. Timeliness is imperative and the instructor should have a well thought out game plan that can be implemented to drive a scenario that will accomplish the sortie objectives. To the maximum extent possible, emergencies given to the PUI should follow a logical progression and stimulate analytical thought in order to support the instructor's game plan, not random EPs.

Discussion: The objective of the sortie is to evaluate compliance with NATOPS/FSD. If the PUI is not in the Basic, Conversion or Transition syllabus, this is likely to be one of the only events that the PUI will be required to focus all attention on basic aircraft procedures. As such, it is not the purpose of this sortie to evaluate the PUI's decision making in a tactical scenario. The Aviation Training System (ATS) and Flight Leadership Program are the appropriate vehicles to evaluate a flight lead's tactical ability and decision making in a high threat environment. The NATOPS Check flight should be focused on the mission planning, brief, execution, and debrief all IAW the OPNAVINST 3710.7 series, NATOPS/FSD and current SOPs.

NATOPS CHECK SCENARIO A

FAM SORTIE

1. **Scenario.** The simulator should be initialized at home field with the engine off and a load-out appropriate for a day VFR FAM sortie. Mission planning should include all standard products and be IAW the following generic sequence of events (the PUI shall contact the evaluator prior to mission planning for specific guidance):

Departure: Afterburner CTO, appropriate SID or Stereo Route
Enroute: IAW with local procedures and radio channelization
Airspace: Restricted or Warning Area that is closer to the auxiliary field than home airfield
Area Work: PUI chooses single ship maneuvers that are encountered during the FAM phase
Pattern Work: Plan for all types of landings and takeoffs at an auxiliary airfield
RTB: IAW with local course rules for 1 full stop CL

2. **Objectives.** The evaluation will concentrate on NATOPS/FSD knowledge, emergency procedures, headwork and CRM throughout all phases of the sortie.

3. **Sequence.**

- a. Start. Respond to one or more:
 1. Abnormal Engine Start
- b. Taxi. Respond to one or more:
 1. Brake Failure
 2. NWS Malfunction
- c. Takeoff. PUI will perform an Afterburner CTO. Respond to one or more (at least one should require a high speed abort):
 1. Engine Malfunction
 2. Fire Indication
 3. Afterburner Malfunction
 4. Abort Call from Tower
- d. Enroute. Respond to one or more (the intent is to work on checklist management while maintaining SA and basic air work to troubleshoot and continue sortie):
 1. CNI Malfunction
 2. Displays or ICAW Malfunction
 3. Canopy or Cabin Pressure Malfunction
 4. General Malfunction (non-mission critical)
- e. FAM Area Work. Respond to one or more (the intent is to troubleshoot a malfunction and determine if the sortie should be discontinued then the appropriate type and location for landing):
 1. CNI Malfunction
 2. Air Data Malfunction
 3. EPS Malfunction
 4. Out of Control / Engine Anomaly

5. General Malfunction (non-mission critical)
 6. General Malfunction (mission critical)
- f. Pattern Work at Auxiliary Airfield. Evaluate at least one of each of the following: CL, SL, VL, STO and VTO. Respond to one or more (at least one shall require a STO abort):
1. FCS degradation
 2. Brake/NWS/Landing Gear Malfunction
 4. Conversion Malfunction
 5. STOVL Malfunction
 6. CG Imbalance
 7. Hydraulic System Malfunction
 8. Bleed Leak Malfunction
- e. RTB. Respond to one or more (at least one shall be an SFO/FO to a full stop):
1. Engine Malfunction
 2. Oil System Malfunction
 3. FCS Malfunction
 4. EPS Malfunction
 5. IPP Malfunction
 6. Cooling Malfunction
 7. Hydraulic System Malfunction
 8. Fire Indication

NATOPS CHECK SCENARIO B

A/S SORTIE

1. **Scenario.** The simulator should be initialized at home field with the engine running in the line and a heavy load-out appropriate for a day VFR AS sortie. The intent of the load out is to evaluate the PUIs weaponeering ability IAW applicable directives. Mission planning should include all standard products and be IAW the following generic sequence of events (the PUI shall contact the evaluator prior to mission planning for specific guidance):

Departure: Afterburner CTO, appropriate SID or Stereo Route
Enroute: IAW with local procedures and radio channelization
Airspace: Restricted or Warning Area that is closer to the auxiliary field than home airfield
AS: PUI chooses weapon delivery profiles that are encountered during the AS phase
Pattern Work: Plan for all types of landings and takeoffs at an auxiliary airfield
RTB: IAW with local course rules for 1 full stop CL.

2. **Objectives.** The evaluation will concentrate on NATOPS/FSD knowledge, emergency procedures, headwork and CRM throughout all phases of the sortie.

3. Sequence

- a. Start. N/A
- b. Taxi. Respond to one or more:
 1. Brake Failure
 2. NWS Malfunction
- c. Takeoff. PUI will perform a heavy weight Afterburner CTO. Respond to one or more (at least one should require a high speed abort):
 1. Engine Malfunction
 2. Fire Indication
 3. Afterburner Malfunction
 4. Abort Call from Tower
- d. Enroute. Respond to one or more (the intent is to work on checklist management while maintaining SA and basic air work to troubleshoot and continue sortie):
 1. CNI Malfunction
 2. Displays or ICAW Malfunction
 3. Canopy or Cabin Pressure Malfunction
 4. General Malfunction (non-mission critical)
- e. Basic Air-to-Surface. Respond to one or more (the intent is to troubleshoot a malfunction and determine if the sortie should be discontinued then the appropriate type and location for landing):
 1. Weapon System or Countermeasure System Malfunction
 2. CNI Malfunction
 3. Air Data Malfunction

4. EPS Malfunction
 5. General Malfunction (non-mission critical)
 6. General Malfunction (mission critical)
- f. Pattern Work at Auxiliary Airfield. Evaluate at least one of each of the following: CL, SL, VL, STO and VTO. Respond to one or more (at least one shall require a STO abort):
1. FCS degradation
 2. Brake/NWS/Landing Gear Malfunction
 4. Conversion Malfunction
 5. STOVL Malfunction
 6. CG Imbalance
 7. Hydraulic System Malfunction
 8. Bleed Leak Malfunction
- e. RTB. Respond to one or more (at least one shall be an SFO/FO to a full stop):
1. Engine Malfunction
 2. Oil System Malfunction
 3. FCS Malfunction
 4. EPS Malfunction
 5. IPP Malfunction
 6. Cooling Malfunction
 7. Hydraulic System Malfunction
 8. Fire Indication

APPENDIX B

ANNUAL NATOPS INSTRUMENT FLIGHT EVALUATION

Description: The annual NATOPS Instrument Evaluation is intended to evaluate the pilot's knowledge and application of instrument procedures in instrument weather conditions. The flight evaluation should be flown in the simulator in accordance with the attached scenario. To ensure compliance with OPNAV 3710.7 series and NAVAIR 00-80T-112, the event must be logged properly with the following code: T&R Code of FAM-0114 and TMR code of 2L3.

Purpose: To provide a standardized annual NATOPS Instrument Evaluation profile that facilitates a comprehensive evaluation of knowledge and adherence to the OPNAVINST 3710.7 series, NAVAIR 00-80T-112, F-35B NATOPS/FSD, and current SOPs.

Sortie Objectives:

- Evaluate the evaluatee's systems knowledge and capability to safely operate the aircraft in instrument weather conditions.
- Evaluate the evaluatee's on adherence to the OPNAV 3710 series, NATOPS/FSD and current SOPs.
- Evaluate the evaluatee's basic instrument flying.
- Evaluate the evaluatee's instrument flight procedures in controlled airspace.
- Evaluate the evaluatee's ability to plan and file for an instrument sortie.

Guidance: The evaluatee shall have completed annual Instrument Ground Training and the written instrument examination within 60 days of the flight evaluation. Prior to the flight evaluation, the evaluatee shall ensure that all minimum approach requirements and instrument flight time are completed and properly documented. The evaluatee shall bring the completed documentation to the brief for review by the evaluator. The evaluatee shall conduct all planning associated with a standard instrument sortie to include fuel planning and a completed DD-175. The simulator brief shall be tailored appropriately to include time for an oral examination of instrument knowledge.

Timeliness is imperative and the evaluator should have a well thought out gameplan that can be implemented to drive a scenario that will accomplish the sortie objectives. To the maximum extent possible, emergencies, unusual attitude recoveries and partial panel airwork should not detract from the evaluation of normal instrument procedures.