

- 24. Computed Weapons Delivery Modes
- 25. Degraded Weapons Delivery Modes
- 26. Weapon Delivery Procedures, Part 1
- 27. Weapon Delivery Procedures, Part 2

(3) Chalk Talks/Practical Application. JMPS Lab - Advanced Mission Planning

(4) Exams. Air-to-Surface Ground School exam.

d. Flight and Simulator Event Training. (14 Events, 18 Hours).

SAS-090 1.5 MTT S
Goal. Introduce A/S RADAR controls and displays.
Requirement. Utilize A/S RADAR controls and displays.
Performance Standards
Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.
Prerequisite. Complete AS stage Ground/Academic training, TCT-088.

SAS-091 1.5 MTT S
Goal. Introduce A/S RADAR modes.
Requirement. Utilize A/S RADAR modes to navigate and track surface targets.
Performance Standards
Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.
Prerequisite. SAS-090.
Ordnance. 6 Mk-76.

SAS-092 1.5 RNWST/WST S
Goal. Introduce computed weapon delivery from medium altitude.
Requirement. Perform 6 30-degree and 6 45-degree BCIP/GCIP deliveries. Perform weapon system programming. Utilize adaptive roll-in technique, target placement angle, and curvilinear to straight path tracking. Perform off target maneuvers. Demonstrate knowledge of jettison system. Utilize WARP to generate weaponeering data.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-091.

Ordnance. 12 Mk-76.

SAS-093

1.5 RNWST/WST S

Goal. Introduce 10-degree computed deliveries.

Requirement. Perform 8 10-degree deliveries of high drag and low drag ordnance. Utilize the adaptive roll-in technique, target placement angle, and curvilinear to straight path tracking. Perform off target maneuvers TACSOP. Utilize WARP to generate weaponeering data.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-092.

Ordnance. 6 Mk-76, 2 Mk-82 HD.

SAS-094

1.5 WST S

Goal. Introduce ARBS/TV deliveries.

Requirement. Perform a WOF update/designation. Perform the J-hook maneuver and straight path to straight path tracking. Utilize the ARBS/TV mode of the DMT to generate height above target data for CCIP and AUTO deliveries. Perform CCIP to AUTO conversions and a point blank bomb pickle. Review 6 30-degree and 6 45-degree deliveries. Utilize WARP to generate weaponeering data.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-093.

Ordnance. 12 Mk-76.

SAS-095

1.5 WST S

Goal. Introduce ARBS/LST deliveries.

Requirement. Perform 6 30-degree and 6 45-degree ARBS/LST deliveries. Review J-Hook maneuver, straight path to straight path tracking, and ARBS/TV deliveries. Utilize WARP to generate weaponeering data.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-094.

Ordnance. 12 Mk-76.

SAS-096

1.5 RNWST S

Goal. Introduce AGR mode and OSCAR differences.

Requirement. Perform OSCAR weapon system programming. Review 6 30-degree and 6 45-degree deliveries using curvilinear to straight path tracking, CCIP and AUTO releases. Utilize RADAR AGR for height above target. Utilize WARP to generate weaponeering data.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-095.

Ordnance. 12 Mk-76.

SAS-097

1.5 NAWST/RNWST/WST S

Goal. Introduce GAU-12 and Rocket deliveries.

Requirement. Perform 4 10-degree GAU-12 and 8 20-degree 5.00" Zuni Rocket deliveries. Utilize the safe escape table and maximum fragmentation envelope chart to ensure safe releases. Utilize WARP to generate weaponeering data.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-093.

Ordnance. 300 rounds 25 mm, 8 5.00" Zuni Rockets.

AS-098

1.0 1 TAV-8B A

Goal. Introduce computed weapons deliveries.

Requirement. Perform 6 30-degree or 45-degree BCIP/GCIP deliveries. Perform weapon preflight and weapon system programming. Utilize the adaptive roll-in technique, target placement angle, and curvilinear to straight path tracking. Perform off target maneuvers. Perform off target rendezvous. Utilize WARP to generate weaponeering data. Review 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-096, VCON-127.

Ordnance. 6 Mk-76.

Range Requirements. RKD RNG.

AS-099

1.0 2 AV-8B A

Goal. Practice medium angle deliveries.

Requirement. PUI perform briefing. Perform 6 30-degree or 45-degree BCIP/GCIP deliveries. Review weapon preflight. Review weapon system programming. Review adaptive roll-in technique, target placement angle, and curvilinear to straight path tracking. Review off target maneuvers and rendezvous. Utilize WARP to generate weaponeering data. Review 1 auto flap VNSL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. AS-098.

Ordnance. 6 Mk-76, 20 Flares.

Range Requirements. RKD RNG, EXP.

AS-100

1.0 2 AV-8B - NA A

Goal. Introduce ARBS/TV deliveries.

Requirement. Perform 6 30-degree or 45-degree ARBS/TV deliveries utilizing the J hook maneuver and straight path to straight path tracking. Review adaptive roll in technique, off target maneuvers, and off target rendezvous. Utilize WARP to generate weaponeering data. Review 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. AS-099.

Ordnance. 6 Mk-76, 20 Flares.

Range Requirements. RKD RNG, EXP.

AS-101

1.0 2 AV-8B - R A

Goal. Introduce AGR mode.

Requirement. Perform 6 30-degree or 45-degree CCIP releases utilizing target placement angle and curvilinear to straight path tracking. Utilize RADAR AGR for height above target. Utilize WARP to generate weaponeering data. Review 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. AS-099.

Ordnance. 6 Mk-76, 20 Flares.

Range Requirements. RKD RNG, EXP.

AS-102

1.0 1 TAV-8B A

Goal. Introduce 10-degree deliveries with low drag ordnance.

Requirement. Perform 6 10-degree CCIP deliveries of low drag ordnance. Utilize WARP to generate weaponeering data. Review 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. AS-099.

Ordnance. 6 Mk-76.

Range Requirements. RKD RNG.

AS-103

1.0 2 AV-8B A

Goal. Introduce GAU-12 employment and 10-degree deliveries with high drag ordnance.

Requirement. Perform 2 10-degree GAU-12 deliveries. Utilize the safe escape table and maximum fragmentation envelope chart to ensure safe releases. Perform 2 10-degree deliveries with high drag ordnance. Utilize WARP to generate weaponeering data. Review 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SAS-097, AS-100, AS-101, AS-102.

Ordnance. 300 rounds 25 mm TP, 2 BDU-45 HD, 20 Flares.

Range Requirements. STRAFE, HVY INERT, WISS, EXP.

13. Target Area Tactics

a. Purpose. Develop proficiency in Target Area Tactics, section tactical formation, contract adherence and communication. Introduce TPOD and PGM employment.

b. General

(1) Scored ranges will be used to the maximum extent possible. If unavailable, performance criteria will be IAW the AV-8B TACSOP.

(2) A WTO required for all events.

c. Ground/Academic Training

(1) Readings

(a) AV-8B NATIP (NTRP 3-22.4). Section 2.11 Litening Targeting Pod (TPOD) C1+

(b) Air NTPP 3-22.1-AV8B

Considerations

1. Chapter 6, Air to Surface Mission Planning

2. Section 7.3, Contracts

3. Section 7.4, Transition Profiles

4. Section 7.6, Standoff Delivery Profiles

Considerations

5. Section 7.9, Laser Guided Bomb Attacks and

6. Section 7.10, Standard Target Area Tactics

(c) AV-8B TACSOP. Air-to-Surface

(d) MAWTS-1 Paveway II LGB Handbook

(2) Lectures

(a) MECH Stage Brief

(b) Receive the following AV-8B Courseware lectures:

1. Target Acquisition/Detection/ID

2. Attack Profiles

3. Laser Guided Bombs and Laser Guided Training Rounds

4. Standard Target Area Tactics

5. Air-to-Surface (A/S) Planning & Timeline Management

6. Reactive Weaponing
7. Introduction to Litening II Targeting Pod
8. Litening II Employment
9. Introduction to the Litening II Targeting Pod (OSCAR)
10. Litening II Targeting Pod (TPOD) Capabilities

(3) Chalk Talks/Practical Application. Transition Profiles Planning
Lab

(4) Exams. Target Area Tactics Ground School exam.

d. Flight and Simulator Event Training. (11 Events, 13 Hours).

SMECH-105 1.5 RNWST/WST S

Goal. Introduce transition profiles, heavyweight aircraft handling, and reactive weaponing.

Requirement. Perform 3 30-degree or 45-degree deliveries and 2 PGM deliveries: 1 level entry to a 45 or 30-degree dive delivery, 1 ramp entry to level delivery; and 1 ramp entry to a 45 or 30-degree dive delivery. Utilize WARP to generate weaponing data including reactive weaponing.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. Complete MECH stage Ground/Academic training, AS-103.

Ordnance. 6 Mk-82 LD, 2 GBU-12.

SMECH-106 1.5 RNWST/WST S

Goal. Introduce low altitude transition profiles.

Requirement. Perform 4 transition profile attacks: 1 low altitude pop-up to 10-degree delivery; 1 cruise climb to 45 or 30-degree delivery; 1 loft delivery and 1 transition attack. Review WARP and reactive weaponing.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SMECH-105.

Ordnance. 6 Mk-82 HD/LD ITER.

SMECH-107 1.5 RNWST S

Goal. Introduce TPOD controls and displays.

Requirement. Utilize TPOD controls and displays.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. Complete MECH stage Ground/Academic training.

Ordinance. TPOD.

SMECH-108

1.5 RNWS T S

Goal. Introduce PGM employment. Introduce PGM weaponeering.

Requirement. Perform 6 PGM attacks: 1 Crank Buddy-Lase, 1 Direct Buddy-Lase, and 1 Podium Buddy-Lase, 1 Crank Self-Lase, 1 Direct Self-Lase, and 1 Podium Self-Lase. Utilize WARP and PMPT to generate weaponeering data.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SMECH-105, SMECH-107.

Ordinance. 4 GBU-12 on ITER, TPOD.

MECH-109

1.0 2 AV-8B A

Goal. Introduce transition profiles.

Requirement. Perform 3 30-degree or 45-degree deliveries: 1 level entry to a 45 or 30-degree dive delivery, 1 ramp entry to level delivery; and 1 ramp entry to a level delivery. Review WARP, reactive weaponeering, 1 RVL, and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SMECH-105.

Ordinance. 4 Mk-82 LD.

Range Requirements. HE.

MECH-110

1.0 1 TAV-8B A

Goal. Introduce low altitude transition profiles.

Requirement. Perform 4 transition profile attacks: 1 low altitude pop-up to 10-degree delivery; 1 cruise climb to 45 or 30-degree delivery; 1 loft, and 1 transition attack. Review WARP, reactive weaponeering, 1 STOL flap FNSL, and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B and TACSOP.

Prerequisite. SMECH-106.

Ordnance. 6 Mk-76.

Range Requirements. TGT, WISS.

MECH-111 1.0 2 TAV-8B A

Goal. Introduce section target area tactics at medium altitude.

Requirement. Perform 5 attacks to 30-degree or 45-degree dive deliveries: 2 same side attacks; 2 swept attacks; and 1 split attack. Review WARP, 1 STOL flap FNSL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B and TACSOP.

Prerequisite. MECH-109.

Ordnance. 6 Mk-76.

Range Requirements. TGT, WISS.

MECH-112 1.0 2 AV-8B A

Goal. Review section target area tactics at medium altitude.

Requirement. Review 5 attacks to 30-degree or 45-degree dive deliveries: 2 same side attacks; 2 swept attacks; and 1 split attack. Review WARP, 1 CL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B and TACSOP.

Prerequisite. MECH-111.

Ordnance. 6 Mk-76, Flares.

Range Requirements. TGT, WISS, EXP.

MECH-113 1.0 2 AV-8B A

Goal. Introduce section target area tactics at low altitude.

Requirement. Perform 1 chased single ship low pop to 10-degree delivery. Perform 2 same side attack and 2 split attacks to 10-degree deliveries. Review WARP, 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. MECH-110, MECH-112.

Ordnance. 6 MK-76.

Range Requirements. TGT, WISS.

MECH-114

1.0 2 AV-8B A

Goal. Introduce buddy-lase target area tactics and PGM employment.

Requirement. As a wingman, perform 4 attacks using buddy-lase tactics: 1 Crank Buddy-Lase; 1 Direct Buddy-Lase, 1 Podium Buddy-Lase, and 1 Buddy-Lase Dive. Review WARP and PMPT weaponeering, 1 decel-VL and 1 press-up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. SMECH-108, MECH-112.

Ordnance. TPOD, LGTR, 3 MK-76, and 10 Flares.

Range Requirements. TGT, WISS, LSR, EXP.

MECH-115

1.0 2 AV-8B A

Goal. Review buddy-lase target area tactics and PGM employment.

Requirement. As a wingman, perform 4 attacks using buddy-lase tactics: 1 Crank Buddy-Lase; 1 Direct Buddy-Lase, 1 Podium Buddy-Lase, and 1 Buddy-Lase Dive. Review WARP and PMPT weaponeering, 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and TACSOP.

Prerequisite. MECH-114.

Ordnance. TPOD, LGTR, 3 MK-76, and 10 Flares.

Range Requirements. TGT, WISS, LSR, EXP.

14. Close Air Support (CAS)

- a. Purpose. Introduce CAS at medium and low altitude.

b. General

(1) Scored ranges will be used to the maximum extent possible. If unavailable, performance criteria will be IAW the AV-8B TACSOP.

(2) A WTO is required for all events.

c. Ground/Academic Training

(1) Readings

(a) Joint Publication 3-09.3, Joint Tactics, Techniques, and Procedures for Close Air Support

1. Executive Summary
2. Chapter I, Introduction, Organization and Fundamentals
3. Chapter III, Planning and Requesting
4. Close Air Support Planning Considerations
5. Integrating Close Air Support with Surface Fire Support
6. Requesting Close Air Support
7. Chapter IV, Preparation
8. Chapter V, Execution
9. Appendix C, Sample Close Air Support Aircrew Mission

Planning Guide

10. Appendix D, Risk-Estimate Distances

- (b) AV-8B NATIP (NTRP 3-22.4). 2.10.3 The CAS Display
- (c) Air NTTP 3-22.1-AV8B. Chapter 9, Close Air Support
- (d) AV-8B TACSOP. Close Air Support

(2) Lectures

- (a) CAS Stage Brief
- (b) Receive the following AV-8B Courseware lectures:
1. OAS Overview
 2. Close Air Support (CAS)
 3. CAS Execution

(3) Chalk Talks/Practical Application. CAS Planning Lab

(4) Exams. CAS Ground School exam.

d. Flight and Simulator Event Training. (5 Events, 6.0 Hours).

- SCAS-120 1.5 RNWST S
- Goal. Introduce CAS at medium altitude.
- Requirement. Perform 4 CAS attacks at medium altitude: 3 with Type 1 and 1 with Type 2 terminal attack control. Introduce the 9-line CAS briefing format and attack preparation checklist. Review WARP and reactive weaponeering.
- Performance Standards
Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, JPub 3-09.3 and AV-8B TACSOP.
- Prerequisite. Complete CAS stage Ground/Academic training, MECH-115.
- Ordnance. 6 Mk-82 LD.
- SCAS-121 1.5 RNWST S
- Goal. Introduce CAS at low altitude.
- Requirement. Perform 4 CAS attacks at low altitude: 3 with Type 1 and 1 with Type 2 terminal attack control. Review the 9-line CAS briefing format, attack preparation checklist, WARP and reactive weaponeering.
- Performance Standards
Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, JPub 3-09.3 and AV-8B TACSOP.
- Prerequisite. SCAS-120.
- Ordnance. Mk-82 HD.
- CAS-122 1.0 TAV-8B A
- Goal. Introduce CAS at medium altitude.
- Requirement. Perform 3 CAS attacks at medium altitude: 2 with Type 1 and 1 with Type 2 terminal attack control. Introduce the 9-line CAS briefing format and attack preparation checklist. Review WARP, reactive weaponeering, 1 STOL flap FNSL, and 1 decel-VL.
- Performance Standards
Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, JPub 3-09.3 and AV-8B TACSOP.
- Prerequisite. SCAS-120.
- Ordnance. 6 MK-76.
- Range Requirements. TGT.

External Syllabus Support. FAC, FAC(A) or simulated FAC(A) with marking capability.

CAS-123 1.0 2 AV-8B A

Goal. Review CAS at medium altitude.

Requirement. Review 3 CAS attacks at medium altitude: 2 with Type 1 and 1 with Type 2 terminal attack control. Review the 9-line CAS briefing format, attack preparation checklist, WARP, reactive weaponeering, 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, JPub 3-09.3 and AV-8B TACSOP.

Prerequisite. CAS-122.

Ordnance. 6 MK-76, 20 Flares.

Range Requirements. TGT, EXP.

External Syllabus Support. FAC, FAC(A) or simulated FAC(A) with marking capability.

CAS-124 1.0 2 AV-8B A

Goal. Introduce CAS at low altitude.

Requirement. Review 3 CAS attacks at low altitude under Type 1 terminal attack control. Review the 9-line CAS briefing format, attack preparation checklist, WARP, reactive weaponeering, 1 STOL flap FNSL, and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, JPub 3-09.3 and AV-8B TACSOP.

Prerequisite. SCAS-121, CAS-123.

Ordnance. 6 MK-76, 20 Flares.

Range Requirements. TGT, EXP.

External Syllabus Support. FAC or SCAR with marking capability.

15. V/STOL Consolidation

a. Purpose. V/STOL consolidation flights are to maintain/regain proficiency of all takeoff and landing procedures after Threat Counter Tactics, Air-to-Surface, and Air-to-Air Ground/Academic training.

b. General. A qualified FRS Landing Site Instructor (LSI) shall supervise all solos.

c. Ground/Academic Training. None.

d. Flight and Simulator Event Training. (4 Events, 4.9 Hours).

- VCON-125 1.3 1 AV-8B A
- Goal. V/STOL Consolidation.
- Requirement. Review STOL flap STO, TACAN Approach, 1 STOL flap FNSL, 1 CL, 1 auto flap VNSL, 1 STOL flap VNSL, roll-and-go landing, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.
- Performance Standards
Execute all procedures IAW AV-8B NATOPS.
- Prerequisite. Complete TCT stage Ground/Academic training, FAM-029.
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- SVCON-126 1.0 RNWST/NAWSTS S
- Goal. Review Emergency procedures.
- Requirement. Perform compound emergencies.
- Performance Standards
Execute all procedures IAW AV-8B NATOPS.
- Prerequisite. Complete AS stage Ground/Academic training, FAM-029.
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- VCON-127 1.3 1 AV-8B A
- Goal. V/STOL Consolidation.
- Requirement. Review STOL flap STO, TACAN Approach, 1 STOL flap FNSL, 1 CL, 1 auto flap VNSL, 1 STOL flap VNSL, 1 roll-and-go landing, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.
- Performance Standards
Execute all procedures IAW AV-8B NATOPS.
- Prerequisite. SVCON-126.
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- VCON-128 1.3 1 AV-8B A
- Goal. V/STOL Consolidation.
- Requirement. Review STOL flap STO, PAR, VFR overhead, 1 STOL flap FNSL, 1 CL, 1 auto flap VNSL, 1 STOL flap VNSL, roll-and-go landing, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.
- Performance Standards
Execute all procedures IAW AV-8B NATOPS.
- Prerequisite. Complete AA stage Ground/Academic training, FAM-029.

16. Air-to-Air (AA)

a. Purpose. Introduce Basic Fighter Maneuvers and air-to-air weapon employment.

b. General

(1) An ACTI is required for all events.

(2) All training will be conducted IAW Air Combat Maneuvering Training Rules (ACMTR).

(3) Every sortie brief shall include applicable ACMTR, detail, aircraft handling characteristics, pertinent aircraft limitations and departure avoidance techniques.

c. Ground/Academic Training

(1) Readings

(a) AV-8B NATOPS Manual (A1-AV8BB-NFM-000)

1. Chapter 4, Operating Limitations
2. Chapter 11, Conventional Flight Characteristics

(b) AV-8B NATIP (NTRP 3-22.4)

1. Chapter 6, Air-to-Air Weapon Delivery
2. Chapter 7, Aircraft Performance Data
3. Appendix A, Aircraft and Stores Limitations

(c) Air NTTP 3-22.1-AV8B

1. Section 15.1, Introduction
2. Section 15.2, Purpose
3. Section 15.3, Basic Fighter Maneuvers
4. Chapter 22, Aircraft Handling Techniques and Procedures
5. Section 24.3 Air to Air Threat Countertactics
6. Appendix A USMC Shot/Kill Criteria Validation

(d) AV-8B TACSOP. Basic Fighter Maneuvers

(e) NATOPS General Flight and Operating Instructions (OPNAV 3710.7). Chapter 5, Flight Rules

(f) NAVMC DIR 3500.14 Aviation Training and Readiness Program Manual. Chapter 4, Aviation Training Rules of Conduct

(g) TOPGUN Manual

1. Chapter 9, Rule of Thumb
2. Chapter 11, Threat Aircraft
3. Chapter 12, Threat RADAR Missiles
4. Chapter 13, Threat IR Missiles
5. Chapter 21, Combat Gunnery
6. Chapter 22, AIM-9 Sidewinder
7. Chapter 39, AIC Control

(2) Lectures

(a) AA Stage Brief

(b) Receive the following AV-8B Courseware lectures:

- Systems
1. Air Combat Maneuvering (ACM) Safety and Air-to-Air
 2. Fighter Performance Comparisons
 3. AIM-9 Sidewinder, Part I
 4. AIM-9 Sidewinder, Part II
 5. Combat Gunnery
 6. Shot Validation
 7. Combat Thrust Vector Control (CTVC)
 8. Threat Aircraft
 9. 1v1 Basic Fighter Maneuvers (BFM)

(3) Chalk Talks/Practical Application. None.

(4) Exams. AA Ground School exam.

d. Flight and Simulator Event Training. (9 Events, 10.5 Hours).

SAA-130

1.5

RNWST/WST S

Goal. Introduce BFM handling.

Requirement. Perform high and slow speed departure recovery; energy management drills for airspeed control, AOA control, and POM effects; turn rate and slow speed/high AOA drills; level, oblique, and vertical break turns; and 250-knot loops.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. Complete AA stage Ground/Academic training, CAS-124.

SAA-131

2.0

RNWST S

Goal. Introduce aircraft Thrust Vector Control (TVC) and RADAR ACM modes. Introduce air-to-air weapon employment and IR Missile Defense. Practice high and slow speed departure recovery.

Requirement. Perform TVC straight and level, TVC assisted turn, and TVC slow speed/high AOA drills; TVC Hover Stop Push Over (HSPO), flop, Hover Stop Wing Over (HSWO), and TVC spiral drill; AIM-9 boresight and coolant management; Heat-to-Guns drill; and IRMD drill utilizing APG-65 and ALE-39. Review high and slow speed departure recovery.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. SAA-130.

AA-132

1.0

2 AV-8B A

Goal. Introduce air-to-air weapon employment, aircraft handling, and TVC.

Requirement. Perform AIM-9 preflight, energy management drills, turn rate and slow speed/high AOA drills, 250-knot loops, break turns, TVC straight and level, TVC assisted turn, TVC slow speed/high AOA drills, TVC HSPO, and HSWO. Review G-awareness maneuver, 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. SAA-131, VCON-128.

Ordnance. CAIM-9M-8, TACTS Pod.

Range Requirements. AA, TACTS.

External Syllabus Support. TACTS debrief facility.

AA-133

1.0

2 AV-8B A

Goal. Introduce BFM procedures and drills.

Requirement. Perform AIM-9 bore sight and range estimation drill; flat scissors, rolling scissors, and heat-to-guns drills; vertical maneuvering drills; deck transition

(positional, energy rate) and separation/bug drills; GAU-12 snapshot guns weave drill; and redefine rate fight drills, cooperative and non-cooperative. Review AIM-9 preflight, G-awareness maneuver, 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. AA-132.

Ordnance. CAIM-9M-8, TACTS Pod, 20 flares.

Range Requirements. AA, TACTS.

External Syllabus Support. TACTS debrief facility.

AA-134

1.0 2 AV-8B R A

Goal. Introduce 1 V 1 offensive BFM.

Requirement. Perform 2 3000-foot and 2 6000-foot perch offensive engagements. Include instruction of turn circle entry, attack window timing, offensive break turn, control zone entry/management, misaligned turn circle maneuvering, offensive rate fight, and ditch counter. Review rolling scissors and snapshot guns weave drills; and 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. AA-133.

Ordnance. CAIM-9M-8, TACTS Pod, 20 flares.

Range Requirements. AA, TACTS.

External Syllabus Support. TACTS debrief facility.

AA-135

1.0 2 AV-8B R A

Goal. Introduce RADAR ACM modes. Review 1 V 1 offensive BFM.

Requirement. Review 2 3000-foot and 2 6000-foot perch offensive engagements utilizing RADAR ACM modes. Include instruction of turn circle entry, attack window timing, offensive break turn, control zone entry/management, misaligned turn circle maneuvering, offensive rate fight, and ditch counter. Review flat scissors and snapshot guns weave drills; and 1 STOL flap VNSL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. AA-134.

Ordnance. CAIM-9M-8, TACTS Pod, 20 flares.

Range Requirements. AA, TACTS.

External Syllabus Support. TACTS debrief facility.

AA-136

1.0 2 AV-8B A

Goal. Introduce 1 V 1 defensive BFM.

Requirement. Perform 2 3000-foot and 2 6000-foot perch defensive engagements. Include instruction of defensive break turn, pre-emptive and reactive expendable employment, maintaining sight techniques, executing lost sight game plan, sensor nose recognition, ditch maneuver, overshoot recognition and counters, defensive rate fighting, and guns defense. Review rolling scissors and heat-to-guns drills; and 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. AA-135.

Ordnance. CAIM-9M-8, TACTS Pod, 20 flares.

Range Requirements. AA, TACTS.

External Syllabus Support. TACTS debrief facility.

AA-137

1.0 2 AV-8B A

Goal. Review 1 V 1 defensive BFM.

Requirement. Review 3000-foot and 2 6000-foot perch defensive engagements. Include instruction of defensive break turn, pre-emptive and reactive expendable employment, maintaining sight techniques, executing lost sight game plan, sensor nose recognition, ditch maneuver, overshoot recognition and counters, defensive rate fighting, and guns defense. Review heat-to-guns drill, 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. AA-136.

Ordnance. CAIM-9M-8, TACTS Pod, 20 flares.

Range Requirements. AA, TACTS.

External Syllabus Support. TACTS debrief facility.

AA-138

1.0

2 AV-8B R A

Goal. Introduce 1 V 1 neutral BFM.

Requirement. Perform 3 neutral engagements from a butterfly setup. Introduce merge control; and 2-circle out-of-plane, 1-circle in-plane, and 1-circle out-of-plane flows. Review 1 3000-foot offensive and 1 6000-foot defensive perches; snapshot guns weave drill, 1 STOL flap FNSL, and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B, NAVMC DIR P3500.14 and TACSOP.

Prerequisite. AA-137.

Ordnance. CAIM-9M-8, TACTS Pod, 20 flares.

Range Requirements. AA, TACTS.

External Syllabus Support. TACTS debrief facility.

17. Night Systems (NS)

a. Purpose. Introduce Night Vision Devices (NVDs) and night systems formation using NVDs.

b. General

(1) PUI shall have 50 AV-8B or TAV-8B flight hours prior to commencing this stage.

(2) All flights shall be lead by a designated FRS Night Systems Familiarization Instructor (NSFI).

c. Ground/Academic Training

(1) Readings

(a) AV-8B NATOPS Manual (A1-AV8BB-NFM-000). Chapter 29, Forward Looking Infrared Navigation System

(b) AV-8B NATIP (NTRP 3-22.4)

1. Section 2.6 Night Vision Goggles

2. Section 2.7 NAVFLIR

(c) Air NTP 3-22.1-AV8B 3.22-1-AV8B

1. Section 3.7, Aircraft Lighting Packages

2. Chapter 5, Night Systems

(d) TACSOP

1. General Standards

2. Night Systems

(2) Lectures

(a) NS Stage Brief

(b) Receive the following AV-8B Courseware lectures:

1. Night Flying Environment and Physiology
2. Infrared Theory
3. Navigation FLIR
4. Night Flying Procedures
5. Aided Night Flying Procedures

(3) Chalk Talks/Practical Application. NITE Lab

(4) Exams. NS Ground School exam.

d. Flight and Simulator Event Training. (6 Events, 8.2 Hours).

SNS-140

1.5

RNWST S N

Goal. Introduce night V/STOL procedures and NVD usage.

Requirement. Perform unaided STOL flap STO, 2 STOL flap FNSL, 2 STOL flap VNSL, 2 RVL, VTO-accel, 1 decel-VL, 1 press-up, touch-and-go, and roll-and-go landings. Perform don/doff procedures airborne and conduct NVD environmental assessment.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. Complete NS stage Ground/Academic training, CAS-124.

SNS-141

1.5

RNWST S NS

Goal. Introduce night V/STOL procedures with NVD.

Requirement. Perform night flight using NVD. Perform ground don/doff procedures, familiarization, and aided STOL flap STO, 3 STOL flap FNSL, 3 RVL, 2 decel-VL, and press-up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. SNS-140.

NS-142

1.3 1 TAV-8B A N

Goal. Introduce night V/STOL procedures and NVD usage.

Requirement. Perform unaided STOL flap STO. Perform don/doff procedures airborne and conduct NVD environmental assessment. Perform TACAN approach, 2 STOL flap FNSL, 2 STOL flap VNSL, 2 RVL, touch-and-go and roll-and-go landings, VTO-accel, 1 decel-VL, and 1 press up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. SNS-141.

Range Requirements. MOA, RSTD.

NS-143

1.3 2 TAV-8B A N

Goal. Introduce night unaided administrative formation and aided deployed echelon formation.

Requirement. Perform unaided stream STO, parade formation, cross under, lead change, running rendezvous, and break up and rendezvous. Perform aided deployed echelon formation. Perform PAR as a wingman. Review don/doff procedures airborne and NVD environmental assessment. Review unaided STOL flap STO, 2 STOL flap FNSL, 2 RVL, and 2 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. NS-142.

Range Requirements. MOA, RSTD.

NS-144

1.3 1 TAV-8B A NS

Goal. Night System V/STOL consolidation.

Requirement. Perform night flight using NVD. Perform familiarization, TACAN approach and aided STOL flap STO, 2 STOL flap FNSL, 2 STOL flap VNSL, 2 RVL, and 2 press-ups.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. NS-143.

NS-145

1.3 2 TAV-8B A NS

Goal. Introduce NS formation.

Requirement. Perform night formation flight using NVD. Perform ground don/doff procedures. Perform aided stream STO. Demonstrate lighting packages and perform formations including parade, deployed echelon, running rendezvous, break-up and rendezvous. Perform PAR as a wingman to low approach. Review aided V/STOL (if airfield conditions and local regulations permit) to include STOL flap STO, 2 STOL flap FNSL, and 2 RVL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. NS-144.

Range Requirements. MOA, RSTD.

18. Night Familiarization

- a. Purpose. Review night unaided procedures, takeoffs, and landings.
- b. General. A FRS LSI shall supervise all landings.
- c. Ground/Academic Training. None.
- d. Flight and Simulator Event Training. (1 Event, 1.3 Hours).

NFAM-146 1.3 1 AV-8B A N*

Goal. Practice night unaided procedures and V/STOL.

Requirement. Perform night unaided STOL flap STO, VTO-accel, 2 STOL flap FNSL, 2 STOL flap VNSL, 1 RVL, touch-and-go, roll-and-go, 1 decel-VL, and 1 press up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. NS-145.

19. NATOPS/Core Skill Introduction Evaluation

- a. Purpose. Conduct Core Skill Introduction NATOPS evaluation.
- b. General

(1) PUI shall complete all Core Skill Introduction stages prior to NATOPS/Core Skill Introduction Evaluation.

(2) A designated AV-8B NATOPS check pilot will observe and certify that the PUI is NATOPS qualified per AV-8B NATOPS Manual, Chapter 10.

- c. Ground/Academic Training.

(1) Readings. Review AV-8B NATOPS Manual (A1-AV8BB-NFM-000)

(2) Lectures. None.

(3) Chalk Talks/Practical Application. None.

(4) Exams

(a) Open book AV-8B NATOPS exam

(b) Closed book AV-8B NATOPS exam

(c) Ground Evaluation IAW AV-8B NATOPS manual

d. Flight and Simulator Event Training. (1 Event, 1.5 Hours).

SNATOPS-195 1.5 RNWST S

Goal. Evaluate knowledge of aircraft systems, normal and emergency procedures.

Requirement. PUI will conduct flight brief. Perform local navigation route to a VFR recovery at home field. Perform all takeoffs and landings. Instructor will select emergencies.

Performance Standards

Execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. NATOPS Ground/Academic training.

132. REFRESHER SYLLABUS

1. Refresher Training

a. Purpose. Refresh pilots in the AV-8B Harrier II+.

b. General

(1) Satisfactory performance metrics for Refresher Syllabus events are determined and maintained by VMAT-203. These performance standards are based on applicable publications (e.g. AV-8B NATOPS Manual, OPNAVINST 3710, etc.), but are tailored to fit adequate pilot performance that is commensurate with an acceptable level of progression. Additional performance standards are specified, when applicable, for each stage of training.

(2) All training shall be conducted IAW applicable portions of OPNAVINST 3710 and NAVMC DIR 3500.14, Aviation Training and Readiness Program Manual.

2. Familiarization

a. Purpose. Review systems management, normal and emergency procedures.

b. General

(1) An early stage FAM instructor is required for events up to, and including, RFAM-158. A late stage FAM instructor is required for events after RFAM-158.

(2) An FRS LSI shall supervise all solos.

c. Ground/Academic Training. Conduct a self-paced review of the FAM stage Ground/Academic training syllabus.

d. Flight and Simulator Event Training. (14 Events, 19.8 Hours).

RSFAM-150 1.5 M,R SS RNWST S

Goal. Practice cockpit, takeoff, in-flight, and landing checklists; normal and emergency procedures.

Requirement. Review CTO, STOL flap STO, TACAN approach, 1 STOL flap FNSL, 1 auto flap VNSL, 1 STOL flap VNSL, 2 RVL, 1 CL, continuous VTO-accel, 1 decel-VL, and 1 press-up. Review instructor selected emergency procedures.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. Complete FAM stage Ground/Academic training.

RSFAM-151 1.5 M,R SS RNWST S

Goal. Review cockpit, takeoff, in-flight, and landing checklists; normal and emergency procedures.

Requirement. Review CTO, 1 STOL flap STO, TACAN approach, GCA approach, 1 STOL flap FNSL, 1 auto flap VNSL, 1 STOL flap VNSL, 2 RVL, 1 CL, continuous VTO-accel, 1 decel-VL, and 1 press-up. Review instructor selected emergency procedures.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RSFAM-150.

RSFAM-152 1.5 M,R SS RNWST S

Goal. Review cockpit, takeoff, in-flight, and landing checklists; normal and emergency procedures.

Requirement. Review STOL flap STO, TACAN approach, PAR, 1 STOL flap FNSL, 1 auto flap VNSL, 1 STOL flap VNSL, 2 RVL, 1 CL, 1 non-continuous VTO-accel, 1 decel-VL, 1 cruise flap decel-VL, and 1 press-up. Review instructor selected emergency procedures.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RSFAM-151.

RSFAM-153 1.5 M,R SS RNWST S

Goal. Review normal and emergency procedures.

Requirement. Review STOL flap STO, TACAN approach, PAR, 1 STOL flap FNLS, 1 auto flap VNSL, 1 STOL flap VNSL, 2 RVL, 1 CL, 1 continuous VTO-accel, 1 crosswind decel-VL, 1 braking-stop decel-VL, and 1 press-up. Review instructor selected emergency procedures.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RSFAM-152.

RSFAM-154 1.5 M,R SS RNWST S

Goal. Review normal and emergency procedures.

Requirement. Review STOL flap STO, PAR, 1 STOL flap FNLS, 1 auto flap VNSL, 1 STOL flap VNSL, 2 RVL, 1 CL, 1 non-continuous VTO-accel, 1 decel-VL, 1 SAAHS-off decel-VL, and 1 press-up. Review instructor selected emergency procedures.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RSFAM-153.

RSFAM-155 1.5 M,R SS RNWST S

Goal. Practice compound emergency procedures. Review normal procedures.

Requirement. Review instructor selected compound emergencies. Review CTO, PAR, 1 STOL flap STO, 1 STOL flap FNLS, 1 CL, 1 auto flap VNSL, 1 STOL flap VNSL, 1 RVL, 1 continuous VTO-accel, 1 decel-VL, and 1 press-up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RSFAM-154.

RFAM-156 1.3 M,R SS 1 TAV-8B A

Goal. Review normal procedures.

Requirement. Review CTO, TACAN approach, STOL flap STO, 1 STOL flap FNLS, 1 CL, 1 auto flap VNSL, 1 STOL flap VNSL, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RSFAM-155.

RFAM-157 1.3 M,R SS 1 TAV-8B A

Goal. Review normal procedures.

Requirement. Review STOL flap STO, PAR, 1 STOL flap FNLS, 1 CL, 1 auto flap VNLS, 1 STOL flap VNLS, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RFAM-156.

RFAM-158

1.3 M,R 1 TAV-8B A

Goal. Review normal procedures.

Requirement. Review STOL flap STO, PAR, 1 STOL flap FNLS, 1 CL, 1 auto flap VNLS, 1 STOL flap VNLS, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. RFAM-157.

RSFAM-159

1.5 M,R RNWST S

Goal. Review instrument flight planning and procedures.

Requirement. Review airways navigation on a round-robin flight. Review instrument flight planning, instrument flight procedures, instrument climb profile, intermediate level-off procedures, maximum range cruise profile, partial panel, unusual attitudes, holding procedures, IFR penetration procedures, TACAN approach, missed approach procedures, and PAR.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS and OPNAVINST 3710.

Prerequisite. RFAM-158.

RFAM-160

1.3 R 1 TAV-8B A

Goal. Review instrument flight planning and procedures.

Requirement. Review airways navigation, partial panel, and minimum fuel PAR. Review instrument flight planning, instrument climb profile, intermediate level-off procedures, maximum range cruise profile, holding procedures, IFR penetration procedures, TACAN approach, and missed approach procedures. Review 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS and OPNAVINST 3710.

Prerequisite. RSFAM-159.

RSFAM-161 1.5 M,R RNWST/WST S

Goal. In-type instrument check.

Requirement. Perform a simulated IMC flight to include a non-precision approach to an unfamiliar field followed by a precision approach to that field or the home field. Perform unusual attitude recoveries.

Performance Standards

Execute all procedures IAW AV-8B NATOPS and OPNAVINST 3710.

Prerequisite. RFAM-160 (R), 159 (M).

RFAM-162 1.3 M,R SS 1 TAV-8B A

Goal. Safe for solo check.

Requirement. Review CTO, STOL flap STO, 1 STOL flap FNSL, 1 CL, 1 auto flap VNSL, 1 STOL flap VNSL, roll-and-go landing, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.

Performance Standards

Execute all procedures IAW AV-8B NATOPS.

Prerequisite. RSFAM-161 (M, R), 157 (SS).

RFAM-163 1.3 M,R SS 1 AV-8B A

Goal. Solo Flight.

Requirement. Review CTO, GCA, STOL flap STO, 1 STOL flap FNSL, 1 CL, 1 auto flap VNSL, 1 STOL flap VNSL, roll-and-go landing, 1 RVL, VTO-accel, 1 decel-VL, and 1 press-up.

Performance Standards

Execute all procedures IAW AV-8B NATOPS.

Prerequisite. RFAM-162.

3. Formation

- a. Purpose. Review section administrative and tactical formations.
- b. General. A basic instructor pilot shall instruct all events.
- c. Ground/Academic Training. Conduct a self-paced review of the FORM stage Ground/Academic training syllabus.
- d. Flight and Simulator Event Training. (1 Event, 1.1 Hours).

RFORM-165 1.1 M,R 2 AV-8B A

Goal. Review section administrative and tactical formations.

Requirement. At medium altitude, review fighter wing, offensive and defensive combat spread formation, parade position, cross under, lead change, breakup and rendezvous, check turns, NAV turns, TAC turns, cross turns, hook turns, and shackle turns. Review 1 VNSL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS.

Prerequisite. Complete FORM stage Ground/Academic training. RFAM-163.

Range Requirements. MOA, RSTD.

4. Navigation

a. Purpose. Review the requisite skills integrating aircraft navigation systems to plan and execute navigation flight using aeronautical charts and visual checkpoints.

b. General. A basic instructor pilot shall instruct all events.

c. Ground/Academic Training. Conduct a self-paced review of the NAV stage Ground/Academic training syllabus.

d. Flight and Simulator Event Training. (1 Event, 1.5 Hours).

RSNAV-170 1.5 M,R RNWST S

Goal. Practice navigation at low altitude.

Requirement. Review navigation at low altitude on a MTR. Navigate to start point. Review navigation at low level using systems, visual navigation techniques, chart interpretation, and visual checkpoint identification.

Performance Standards

Satisfactory execute all procedures IAW AV-8B NATOPS.

Over fly the final point within +/- 20 seconds of planned timing and within +/- 500 pounds of planned fuel.

Prerequisite. Complete NAV stage Ground/Academic training, RFAM-163.

5. Threat Counter Tactics (TCT)

a. Purpose. Review the AV-8B EW suite, surface-to-air threat countertactics and ALSA Communication Brevity.

b. General. A WTO shall instruct all events.

c. Ground/Academic Training. Conduct a self-paced review of the TCT stage Ground/Academic training syllabus.

d. Flight and Simulator Event Training. (1 Event, 1.5 Hours).

RSTCT-175 1.5 R RNWST S

Goal. Review EW suite and surface-to-air threat countertactics at medium and low altitude.

Requirement. Review setup and employment of the ALE-39, ALR-67, and ALQ-164. Review ALSA communications, lean, notch, level-S, guns jink, and SAM weave at medium and low altitude. Review medium to low altitude deck transition. Review decision matrix for jettison criteria. Review pre-emptive and reactive expendable game plans.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. Complete TCT stage Ground/Academic training, RSNV-170.

6. Air-to-Surface (AS)

a. Purpose. Review BCWD skills, section tactical formation, and ALSA Communication Brevity.

b. General

(1) Scored ranges will be used to the maximum extent possible. If unavailable, performance criteria will be based IAW AV-8B TACSOP.

(2) A WTO shall instruct all events.

c. Ground/Academic Training. Conduct a self-paced review of the AS stage Ground/Academic training syllabus.

d. Flight and Simulator Event Training. (3 Events, 3.5 Hours).

RSAS-180 1.5 M,R WST S

Goal. Practice ARBS/TV and LST deliveries.

Requirement. Utilize WARP to generate weaponeering. Review weapon system programming. Review 4 45-degree, 4 30-degree, and 4 10-degree ARBS/TV and LST deliveries. Utilize the adaptive roll-in technique, target placement angle, and curvilinear to straight path tracking. Review off target maneuvers. Review the jettison system.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. Complete AS stage Ground/Academic training, RSTCT-175 (R), RSNV-170 (M).

Ordnance. 12 Mk-76.

RAS-181 1.0 M,R 1 TAV-8B/2 AV-8B A

Goal. Review computed weapons deliveries.

Requirement. Utilize WARP to weaponeering data. Perform weapon preflight and weapon system programming. Perform 6 30-degree or 45-degree BCIP/GCIP deliveries. Utilize the adaptive roll-in technique, target placement angle, and curvilinear to straight path tracking. Review off target maneuvers. Perform off target rendezvous. Review 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. RFORM-165, RSAS-180.

Ordnance. 6 Mk-76.

Range Requirements. RKD RNG.

RAS-182 1.0 M,R 2 AV-8B A

Goal. Practice ARBS/TV or AGR deliveries.

Requirement. Utilize WARP to generate weaponeering. Review 4 30-degree or 45-degree ARBS/TV or AGR deliveries. Utilize the J-hook maneuver and straight path to straight path or curvilinear to straight path tracking. Review adaptive roll in technique, off target maneuvers, and off target rendezvous. Review 2 10-degree ARBS/TV or AGR deliveries. Review 2 10-degree simulated GAU-12 deliveries. Utilize the safe escape table and maximum fragmentation envelope chart to ensure safe releases. Review 1 RVL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. RAS-181.

Ordnance. 6 Mk-76.

Range Requirements. RKD RNG.

7. Target Area Tactics

a. Purpose. Review Target Area Tactics, section tactical formation, PGM employment, and ALSA Communication Brevity.

b. General

(a) Scored ranges will be used to the maximum extent possible. If unavailable, performance criteria will be IAW AV-8B TACSOP.

(b) A WTO shall instruct all events.

c. Ground/Academic Training. Conduct a self-paced review of the MECH stage Ground/Academic training syllabus.

d. Flight and Simulator Event Training. (4 Events, 5 Hours).

RSMECH-185 1.5 R RNWST/WST S

Goal. Review transition profiles.

Requirement. Perform 3 30-degree or 45-degree deliveries. Perform 2 PGM deliveries: 1 level entry to 45 or 30-degree delivery, 1 ramp entry to level delivery; and 1 ramp entry to 45 or 30-degree dive delivery. Utilize WARP to generate weaponeering data including reactive weaponeering.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. Complete MECH stage Ground/Academic training, RAS-182.

Ordnance. 6 Mk-82 LD and 2 GBU-12.

RSMECH-186 1.5 R RNWST/WST S

Goal. Review low altitude transition profiles.

Requirement. Perform 4 transition profile attacks: 1 low altitude pop-up to 10-degree delivery; 1 cruise climb to 45 or 30-degree delivery; 1 loft, and 1 transition attack. Review WARP and reactive weaponeering.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. RSMECH-185.

Ordnance. 6 Mk-82 HD/LD ITER.

RMECH-187 1.0 R 2 AV-8B A

Goal. Review section target area tactics at medium altitude.

Requirement. Perform 5 attacks to 30-degree or 45-degree delivery: 2 same side attacks, 2 swept attacks, and 1 split attack. Review 1 STOL flap FNSL and 1 decel-VL.

Performance Standards

Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. RSMECH-186.

Ordnance. TACTS POD, simulated 6 Mk-82 LD.

Range Requirements. NDBS.

External Syllabus Support. TACTS debrief facility.

RMECH-188 1.0 R 2 AV-8B A

Goal. Brief, lead, and debrief section target area tactics at medium altitude.

Requirement. PUI will conduct briefing and lead the flight. Perform 5 attacks to 30-degree or 45-degree delivery: 2 same side attacks, 2 swept attacks, and 1 split attack. PUI will conduct debrief. Review 1 CL and 1 decel-VL.

Performance Standards
Satisfactorily execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B and AV-8B TACSOP.

Prerequisite. RMECH-187.

Ordnance. TACTS POD, simulated 6 Mk-82 LD.

Range Requirements. NDBS.

External Syllabus Support. TACTS debrief facility.

8. Close Air Support (CAS)

- a. Purpose. Review CAS at medium altitude.
- b. General. A WTO shall instruct all events.
- c. Ground/Academic Training. Conduct a self-paced review of the CAS stage Ground/Academic training syllabus.
- d. Flight and Simulator Event Training. (1 Event, 1.5 Hours).

RSCAS-190 1.5 R RNWST S

Goal. Review CAS at medium altitude.

Requirement. Perform 4 CAS attacks at medium altitude: 3 with Type 1 and 1 with Type 2 terminal attack control. Review the 9-line CAS briefing form and an attack preparation checklist.

Performance Standards
Satisfactory execute all procedures IAW AV-8B NATOPS.

Prerequisite. Complete CAS stage Ground/Academic training, RSMECH-186.

Ordnance. Mk-82 LD.

9. NATOPS/Core Skill Introduction Evaluation

- a. Purpose. Conduct Core Skill Introduction NATOPS evaluation.

b. General

(1) PUI shall complete requisite Refresher syllabus prior to NATOPS/Core Skill Introduction Evaluation.

(2) A designated AV-8B NATOPS check pilot will observe and certify that the PUI is NATOPS qualified per AV-8B NATOPS Manual, Chapter 10.

c. Ground/Academic Training

(1) Readings. Review AV-8B NATOPS Manual (A1-AV8BB-NFM-000)

(2) Lectures. None.

(3) Chalk Talks/Practical Application. None.

(4) Exams

(a) Open book AV-8B NATOPS exam

(b) Closed book AV-8B NATOPS exam

(c) Ground Evaluation IAW AV-8B NATOPS manual

d. Flight and Simulator Event Training. (1 Event, 1.5 Hours).

SNATOPS-195 1.5 E,M,R, SS RNWST S

Goal. Evaluate knowledge of aircraft systems, normal and emergency procedures.

Requirement. PUI will conduct flight brief. Perform local navigation route to a VFR recovery at home field. Perform all takeoffs and landings. Instructor will select emergencies.

Performance Standards

Execute all procedures IAW AV-8B NATOPS, Air NTP 3-22.1-AV8B, and AV-8B TACSOP.

Prerequisite. NATOPS Ground/Academic training.

133. CORE SKILL BASIC PHASE

1. Core Skill Basic Training

a. Purpose. This stage develops a wingman that is proficient in all fundamental skills required to employ the AV-8B. This stage focuses on air-to-surface and air-to-air skill development in:

- (1) System management and sensor employment
- (2) Weapon employment
- (3) Threat countertactics
- (4) Section and division tactical fundamentals

(5) Day and night conditions

b. General

(1) Initial POI events are tailored to a wingman's role.

(2) Passing grade on written examinations is 80%.

2. Familiarization

a. Purpose. Maintain proficiency in normal and emergency procedures; navigation, and instrument flight procedures. Introduce OFP differences.

b. General. Flight with NVD is authorized if current and proficient in the Night Systems core skill.

c. Ground/Academic Training

(1) Readings

(a) AV-8B NATOPS Manual (A1-AV8BB-NFM-000)

1. Review Chapter 2, Systems
2. Review Chapter 4, Operating Limitations
3. Review Chapter 7, Shore Base-Based Procedures
4. Review Chapter 12, General Emergencies
5. Review Chapter 13, Ground Emergencies
6. Review Chapter 14, Takeoff Emergencies
7. Review Chapter 15, In-flight Emergencies
8. Review Chapter 16, Landing Emergencies
9. Review Chapter 17, Emergency Egress
10. Review Chapter 18, Immediate Action Items

(b) Air NTTP 3-22.1-AV8B. Review Chapter 3, Flight Administrative Procedures

(c) AV-8B TACSOP. Review General Standards

(d) Review Wing and MAG Standard Operating Procedures

(e) Review applicable range regulations and course rules

(2) Lectures. None.

(3) Chalk Talks/Practical Application. None.

(4) Exams. None.

d. Flight and Simulator Event Training. (3 Events, 3.3 Hours).

- SFAM-200 1.0 NWST/RNWST S (NS)
- Goal. Introduce AV-8B OFP differences.
- Requirement. Introduce cockpit functionality of new software and systems associated in fleet aircraft including ALE-39 programming and EW page displays. Introduce post start systems programming, HOTAS, and displays.
- Performance Standards
Demonstrate familiarity with aircraft system set-up, HOTAS and MPCD menus associated with fleet aircraft OFP.
- Prerequisite. Complete Ground/Academic training, (NS-255 if aided).
- SFAM-201 1.0 R NWST/RNWST S (NS)
- Goal. Review normal and emergency procedures.
- Requirement. Review normal and emergency procedures and checklists. Review 1 CTO, 2 STO, 1 VTO, 1 FNSL, 1 VNSL, 1 CL, and 1 VL with 6 simulated emergencies. Review CRM associated with emergencies.
- Performance Standards
Execute all normal and emergency procedures IAW AV-8B NATOPS.
- Prerequisite. SFAM-200, (NS-255 if aided).
- FAM-202 1.3 R 1+ AV-8B A (NS)
- Goal. Review familiarization, navigation, and/or instrument flight.
- Requirement. As directed, review normal and emergency procedures and checklist, instrument flight procedures and/or navigation procedures.
- Performance Standards
Execute all normal and emergency procedures IAW AV-8B NATOPS, OPNAVINST 3710, and applicable FLIP publications.
- Prerequisite. SFAM-201, (NS-255 if aided).
- Range Requirement. RSTD.

3. Air-to-Air Refueling (AAR)

- a. Purpose. Review day AAR qualification. Complete night AAR qualification.

b. General

(1) The requirements outlined in AAR-210 are for a Refresher POI AAR qualification.

(2) Initial AAR qualifications shall be conducted IAW the Air Refueling NATOPS Manual.

(3) AAR training may be executed in conjunction with ferry missions or as part of a tactical sortie provided all prerequisites are met.

(4) A Section Lead shall instruct all initial training events.

c. Ground/Academic Training

(1) Readings

(a) AV-8B NATOPS Manual (A1-AV8BB-NFM-000). Review Chapter 9, Paragraph 9.2, Air Refueling

(b) Review ATP-56(B)

(c) AV-8B TACSOP. Review Air-to-Air Refueling

(2) Lectures. Review AV-8B Courseware AAR lecture.

(3) Chalk Talks/Practical Application. None.

(4) Exams. None.

d. Flight and Simulator Event Training. (2 Events, 2.6 Hours).

AAR-210 1.3 R 1+ AV-8B A

Goal. Review day AAR.

Requirement. Perform all AAR procedures. Perform 1 tanker rendezvous and establish observation and pre-contact positions. Execute 6 successful engagements on refueling drogue with 1 engagement under simulated NORDO conditions with an emergency break-away. Perform tanker departure. This event will be flown in section or division for an initial or refresher POI.

Performance Standards

Execute all procedures IAW AV-8B and AAR NATOPS manuals.

Prerequisite. Complete Ground/Academic training, FAM-202.

Range Requirements. AAR.

External Syllabus Support. Compatible KC-130, strategic or tactical tanker.

AAR-211 1.3 R 1+ AV-8B A N

Goal. Introduce night AAR.

Requirement. Perform all AAR procedures at night. Perform 1 tanker rendezvous and establish observation and pre-contact positions. Execute 6 successful engagement on refueling drogue with 1 engagement under simulated NORDDO conditions with an emergency break-away. Perform tanker departure. This event will be flown in section or division for an initial or refresher qualification.

Performance Standards
Execute all procedures IAW AV-8B and AAR NATOPS manuals.

Prerequisite. AAR-210, (NS-255 if aided).

Range Requirements. AAR.

External Syllabus Support. Compatible KC-130, strategic or tactical tanker.

4. Low Altitude Tactics

a. Purpose. Complete LAT Qualification.

b. General

(1) All training shall be conducted IAW NAVMC DIR 3500.14, Aviation Training and Readiness Manual LAT Rules of Conduct.

(2) All mission planning and flight briefs shall include BAM/BASH data and current route obstructions considerations.

(3) Completion of this stage constitutes LAT qualification.

(4) A LATI shall instruct all initial training events.

c. Ground/Academic Training

(1) Readings

(a) Air NTTP 3-22.1-AV8B

1. Review Chapter 4, Low Altitude Tactics

2. Review Chapter 24, Section 24.2, Surface-to-Air Threat Countertactics

(b) AV-8B TACSOP. Review Low Altitude Tactics

(c) NAVMC DIR 3500.14, Aviation Training and Readiness Program Manual. Review Chapter 4, LAT Rules of Conduct

(2) Lectures

(a) Review the following AV-8B Courseware lectures:

1. ALQ-164

2. ALE-39

3. ALR-67

(b) Receive the following MAWTS-1 Courseware lectures by a LATI:

1. TACAIR LAT Part 3
2. TACAIR LAT Part 4

(3) Chalk Talks/Practical Application. Surface-to-air threat countertactics game plans against range known and range unknown threat with a LATI.

(4) Exams. LAT exam.

d. Flight and Simulator Event Training. (4 Events, 4.0 Hours).

SLAT-220 1.0 NWST/RNWST S

Goal. Review basic and advanced LAT procedures.

Requirement. Perform basic and advanced LAT procedures on a LAT circuit in a mountainous database emphasizing TCT and MCT. Practice straight and level flight, 4 level turns, 2 ridgeline crossings, terrain masking, and climb-to-cope. Practice 1 transition to LAT, 2 vertical jinks, 2 SOJ, 2 TOJ, and 2 ROJ. Emphasize adherence to the 10-degree rule, 50-percent rule, and dive recovery rules. Practice efficient scan techniques that enable aerodynamic, vector, and altitude control.

Performance Standards

Maintain a minimum of 100-foot clearance of all obstructions. Execute all LAT procedures IAW Air NTTP 3-22.1-AV8B. Adhere to LAT Rules of Conduct. Communications IAW ALSA Communication Brevity. Proficient cockpit management including TCT and MCT.

Prerequisite. Complete Ground/Academic training, FAM-202.

SLAT-221 1.0 R NWST/RNWST S

Goal. Review threat countertactics at low altitude.

Requirement. Review guns jink, level-S, break turns, SAM Weave (initiated from medium and low altitude) and MAC. Emphasize threat recognition, identification and assessment, decision points based on threat matrix, ALSA Communication Brevity, and reactions versus threat engagement timelines. Threat database shall include RF SAMS and RF AAA.

Performance Standards

Maintain a minimum of 100-foot clearance of all obstructions. Execute all surface-to-air threat countertactics procedures IAW Air NTTP 3-22.1-AV8B. Adhere to LAT Rules of Conduct. Communications IAW ALSA Communication Brevity. Proficient cockpit management including TCT and MCT.

Prerequisite. SLAT-220.

Ordnance. 6 Mk-82 HD, ALQ-164, SEL 1.

LAT-222

1.0 2 AV-8B A

Goal. Review basic and advanced LAT procedures.

Requirement. Perform basic and advanced LAT procedures on a LAT circuit emphasizing TCT and MCT. Practice straight and level flight, 4 level turns, 2 ridgeline crossings, terrain masking, and climb-to-cope. Practice 1 transition to LAT, 2 vertical jinks, 2 SOJ, 2 TOJ, and 2 ROJ. Emphasize adherence to the 10-degree rule, 50-percent rule, and dive recovery rules. Practice efficient scan techniques that enable aerodynamic, vector, and altitude control.

Performance Standards

Maintain a minimum of 200-foot clearance of all obstructions. Execute all LAT procedures IAW Air NTTP 3-22.1-AV8B. Adhere to LAT Rules of Conduct. Communications IAW ALSA Communication Brevity. Proficient cockpit management including TCT and MCT.

Prerequisite. SLAT-221.

Range Requirement. RSTD, LAT.

LAT-223

1.0 2 AV-8B A

Goal. Review threat countertactics at low altitude.

Requirement. Review guns jink, level-S, break turns, and SAM Weave (initiated from medium and low altitude). Emphasize threat recognition, identification and assessment, decision points based on threat matrix, ALSA Communication Brevity, and reactions versus threat engagement timelines. Threats shall include RF SAMS and RF AAA.

Performance Standards

Maintain a minimum of 200-foot clearance of all obstructions. Execute all LAT and procedures IAW Air NTTP 3-22.1-AV8B. Adhere to surface-to-air threat countertactics gameplan. Adhere to LAT Rules of Conduct. Communications IAW ALSA Communication Brevity. Proficient cockpit management including TCT and MCT.

Prerequisite. LAT-222.

Ordnance. TACTS Pod, ALQ-164, expendables.

Range Requirements. RSTD, LAT, TACTS, SST, EW.

5. Air-to-Surface

a. Purpose. Review surface-to-air threat countertactics. Introduce and review air-to-surface sensors and targeting; the employment of free fall,

forward firing, and precision guided munitions from the medium and low altitude regimes; and section and division target area tactics.

b. General. A Section Lead shall instruct all events.

c. Ground/Academic Training

(1) Readings

(a) AV-8B NATIP (NTRP 3.22-4)

1. Review Chapter 4, External Stores
2. Review Chapter 5, Air-to-Ground Weapon Delivery

(b) Air NTTP 3-22.1-AV8B

1. Review Chapter 6, Air-to-Surface Mission Planning

Considerations

2. Review Chapter 7, Target Area Tactics

(c) AV-8B TACSOP. Review Air-to-Surface

(2) Lectures

(a) Review the following AV-8B Courseware lectures:

1. Height Above Target
2. GP Bombs
3. GP Bomb Fuzing
4. 25 mm Gun
5. Rockets
6. Forward-Firing Ordnance and Weaponing
7. Laser Guided Bombs and Laser Guided Training Rounds
8. Attack Profiles
9. Standard Target Area Tactics
10. Air-to-Surface (A/S) Planning & Timeline Management

(b) Receive the following AV-8B Courseware lectures from a WTO:

1. Cluster Weapons and Fuzing
2. Joint Direct Attack Munition

3. LASER Maverick

4. Division Target Area Tactics

(3) Chalk Talks/Practical Application. With a WTO:

(a) Wingman contracts and responsibilities

(b) JMEMS Air-to-Surface Weaponing System (JAWS) lab including Paveway Mission Planning Tool

(c) VX-31 Sensor Footprint lab

(4) Exams. None.

d. Flight and Simulator Event Training. (15 Events, 18.0 Hours).

SAS-230 1.0 R RNWST/NWST S (NS)

Goal. Review surface-to-air threat countertactics, transition maneuvers, and CCIP deliveries from medium altitude.

Requirement. Complete 3 medium altitude and 3 low altitude attacks with a surface-to-air threat. Perform pre-emptive and reactive threat countertactics: lean, notch, level-S, SAM weave, and deck transition against range known and range unknown threats.

Performance Standards

Execute IAW AIR NTTP 3-22.1-AV8B.
Demonstrate proper use of ALQ-164, ALR-67, and ALE-39.
Correct weaponing utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP.
Execute briefed air-to-surface timeline.
Comply with Tactical Abort Parameters.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Correct ALSA Communication Brevity.

Prerequisite. Complete Ground/Academic training, LAT-223.

Ordinance. TPOD, 2 Mk-82LD w/DSU-33, 1 Mk-83LD w/DSU-33, ALQ-164, and SEL 1.

SAS-231 1.0 RNWST S (NS)

Goal. Review AS sensors: TPOD and APG-65.

Requirement. Complete required TPOD ground checks. Conduct 8 TPOD and RADAR Expand Map sensor runs against varied target sets. Review TPOD and RADAR AS modes and HOTAS. Review RADAR Expand Map techniques.

Performance Standards

Demonstrate proper TPOD ground procedures.
Demonstrate proper TPOD management.
Demonstrate proper HOTAS for the TPOD.
Demonstrate proper HOTAS for RADAR AS modes.

Demonstrate knowledge of the source of the system designation.

Prerequisite. FAM-202.

Ordnance. TPOD.

SAS-232 1.0 R RNWST/NWST S (NS)

Goal. Review computed deliveries from medium and low altitude.

Requirement. Conduct 6 45-degree and 4 10-degree systems deliveries on a scored range. Review APG-65 air-to-surface modes or ARBS/TV weapons delivery procedures. Introduce LCIP/LAUT delivery modes.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV-8B.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP.
Execute briefed air-to-surface timeline.
Comply with Tactical Abort Parameters.
Valid weapon release IAW AIR NTTP 3-22.1-AV8B.
Correct ALSA Communication Brevity.

Prerequisite. SAS-231.

Ordnance. TPOD, 6 Mk-82 H/L SEL on ITERS, and SEL 1.

SAS-233 1.0 R RNWST/NWST S (NS)

Goal. Introduce JDAM deliveries.

Requirement. Conduct level JDAM deliveries. Complete 1 pre-planned delivery, and 3 reactive deliveries with terminal parameters enabled using the TPOD to generate target coordinates.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV-8B.
Correct weaponeering utilizing JMPS CUPC, JAWS, current flight clearances, and AV-8B NATIP.
Execute briefed air-to-surface timeline.
Proper use of TPOD to generate target coordinates.
Comply with Tactical Abort Parameters.
Valid weapon release IAW AIR NTTP 3-22.1-AV8B.
Correct ALSA Communication Brevity.

Prerequisite. SAS-231.

Ordnance. TPOD, 2 GBU-38, 1 GBU-32, and SEL 1.

SAS-234 1.0 RNWST/NWST S (NS)

Goal. Introduce LMAV and LGB deliveries.

Requirement. Conduct 2 self-lase LGB deliveries and 1 LMAV buddy-lase delivery.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV-8B.
Correct weaponeering utilizing PMPT, JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Adhere to briefed air-to-surface timeline.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Valid weapon release IAW AIR NTTP 3-22.1-AV8B.
Correct ALSA Communication Brevity.

Prerequisite. SAS-231.

Ordnance. TPOD, 1 GBU-12, 1 GBU-16, 1 LMAV, and SEL 1.

AS-235

1.3 R 2 AV-8B A (NS)

Goal. Review surface-to-air threat countertactics, transition maneuvers, and CCIP deliveries from medium altitude.

Requirement. Complete 2 medium altitude and 2 low altitude attacks with a surface-to-air threat. Perform pre-emptive and reactive threat countertactics: lean, notch, level-S, SAM weave, and deck transition against range known and range unknown threats.

Performance Standards

Execute IAW AIR NTTP 3-22.1-AV8B.
Demonstrate proper use of ALQ-164, ALR-67, ALE-39.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Adhere to briefed air-to-surface timeline.
Comply with Tactical Abort Parameters.
Valid weapon release IAW AIR NTTP 3-22.1-AV8B.
Correct ALSA Communication Brevity.

Prerequisite. SAS-230.

Ordnance. TPOD, free fall ordnance, ALQ-164, TACTS Pod, and expendables.

Range Requirements. TACTS, EW, RSTD, MOA, SST.

External Syllabus Support. TACTS debrief facility.

AS-236

1.3 2+ AV-8B A (NS)

Goal. Review AS sensors: TPOD and APG-65.

Requirement. Complete required TPOD ground checks. Conduct 6 TPOD and RADAR Expand Map sensor runs against varied target sets. Review TPOD and RADAR AS modes and HOTAS. Review RADAR Expand Map techniques.

Performance Standards

Demonstrate proper TPOD ground procedures.
Demonstrate proper TPOD management.
Demonstrate proper HOTAS for the TPOD.
Demonstrate proper HOTAS for RADAR AS modes.
Demonstrate knowledge of the source of the system designation.

Prerequisite. SAS-231.

Ordnance. TPOD, RADAR capable aircraft.

Range Requirements. RSTD, LSR, RDR TGT, IR TGT.

AS-237

1.3 2+ AV-8B A (NS)

Goal. Introduce TPOD scene interpretation, target identification and DMPI selection.

Requirement. Conduct multiple TPOD sensor runs against varied tactical target sets. Compare CCD TV and FLIR images. Introduce LGB air-to-surface timelines. Complete 1 LGTR self-lase delivery.

Performance Standards

Demonstrate proper use of the TPOD to designate targets.
Effectively identify and PID targets.
Execute briefed air-to-surface timeline.
Correct ALSA Communication Brevity.

Prerequisite. AS-236.

Ordnance. TPOD, 1 LGTR, and expendables.

Range Requirements. RSTD, LSR, IR TGT, RECCE ARRAY, EXP.

AS-238

1.3 R 2+ AV-8B A (NS)

Goal. Introduce LCIP/LAUT deliveries and review BCWD from medium and low altitude.

Requirement. On a scored range, execute 4 30-degree or 45-degree deliveries and 2 10-degree deliveries using TPOD as the source of the system designation.

Performance Standards

Execute IAW Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Comply with established contracts.
Valid weapon release IAW AIR NTTP 3-22.1-AV8B.
Weapon impacts within CEP for the weapon.
Correct ALSA Communication Brevity.

Prerequisite. SAS-232, AS-237.

Ordnance. TPOD, 6 MK-76, and expendables.

Range Requirements. RKD RNG, LSR, LT INERT, EXP.

AS-239

1.3 2+ AV-8B A (NS)

Goal. Review GAU-12 and rocket deliveries from medium and low altitude.

Requirement. On a scored range, perform 3 10-degree GAU-12 deliveries and 2 20-degree 5.00-inch rocket deliveries on a scored range. Review gun and rocket malfunctions.

Performance Standards

Execute IAW Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Comply with established contracts.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Weapon impacts within CEP.
Correct ALSA Communication Brevity.

Prerequisite. SAS-232, AS-238.

Ordnance. TPOD, 300 rounds 25mm, 4x5" Rockets, and expendables.

Range Requirements. RKD RNG, LSR, STRAFE, HE, EXP.

AS-240

1.3 2 AV-8B A (NS)

Goal. Introduce pop-up attacks from low-altitude.

Requirement. Execute 4 pop-up attacks to 10-degree deliveries on a raked range. Review DMT/LST, AGR, or LCIP deliveries.

Performance Standards

Execute IAW Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Comply with established contracts.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Weapon impacts within CEP.
Correct ALSA Communication Brevity.

Prerequisite. LAT-223, AS-239.

Ordnance. TPOD, 6 MK-76, and expendables.

Range Requirements. RKD RNG, LSR, STRAFE, LT INERT, EXP.

AS-241

1.3 2 AV-8B A (NS)

Goal. Review LMAV and LGB deliveries.

Requirement. On a scored range, execute 2 self-lase LGB deliveries and 1 LMAV buddy-lase delivery.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing PMPT, JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Execute briefed air-to-surface timeline.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Correct ALSA Communication Brevity.

Prerequisite. SAS-234, AS-237.

Ordnance. TPOD, 2 LGBs or LGTRs, CATM-65E or AGM-65E, and expendables.

Range Requirements. RSTD, LGB, AS MISSILE, EXP, WISS or RKD RNG.

AS-242

1.3 2 AV-8B A (NS)

Goal. Introduce JDAM deliveries.

Requirement. Conduct level JDAM deliveries. Complete 1 pre-planned delivery, and 3 reactive deliveries (2 with simulated ordnance) with terminal parameters enabled using the TPOD to generate target coordinates.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JMPS CUPC, JAWS, current flight clearances, and AV-8B NATIP.
Execute briefed air-to-surface timeline.
Proper use of TPOD to generate target coordinates.
Comply with Tactical Abort Parameters.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Weapon impacts within CEP.
Correct ALSA Communication Brevity.

Prerequisite. SAS-233, AS-237.

Ordnance. TPOD, 2 GBU-32/38 and expendables.

Range Requirements. RSTD, JDAM, LSR, EXP, WISS or RKD RNG.

AS-243

1.3 R 2+ AV-8B A (NS)

Goal. Review visual target area tactics.

Requirement. Execute 4 medium altitude target attack using dive delivery profiles on a scored range.

Performance Standards

Execute IAW Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Execute briefed air-to-surface timeline.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Weapon impacts within CEP.
Correct ALSA Communication Brevity.

Prerequisite. SAS-235, AS-239.

Ordnance. TPOD, 6 Mk-76, and expendables.

Range Requirements. RSTD, LSR, LT INERT, WISS or RKD RANGE, WISS.

AS-244

1.3 R 2+ AV-8B A (NS)

Goal. Review target area tactics using medium and high altitude standoff delivery profiles.

Requirement. Conduct 3 AGM-65E, LGB, or JDAM deliveries using standoff target area tactics.

Performance Standards

Execute IAW Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Execute briefed air-to-surface timeline.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Weapon impacts within CEP for the weapon.
Correct ALSA Communication Brevity.

Prerequisite. SAS-235, AS-241, AS-242.

Ordnance. TPOD, PGMs, and expendables.

Range Requirements. RSTD, JDAM, LGB, HE.

6. Night Systems (NS)

a. Purpose. Complete NSQ HI qualification.

b. General

(1) All training shall be conducted IAW NAVMC DIR 3500.14, Aviation Training and Readiness Manual NS Rules of Conduct.

(2) The first sortie, NS-252, shall be flown in High Light Level (HLL) conditions. At least 1 of the remaining 3 sorties, NS-253 through NS-235, shall be flown in Low Light Level (LLL) conditions.

(3) Completion of this stage constitutes NSQ HI qualification.

(4) An NSI shall instruct all initial training events.

c. Ground/Academic Training

(1) Readings

(a) AV-8B NATOPS Manual (A1-AV8BB-NFM-000). Review Chapter 15, In-flight Emergencies, Electrical Malfunctions

(b) AV-8B NATIP (NTRP 3.22-4). Review Section 2.6, Night Vision Goggles

(c) Air NTP 3-22.1-AV8B. Review Chapter 5, Night Systems

(d) AV-8B TACSOP. Review Night Systems

(e) NAVMC DIR 3500.14, Aviation Training and Readiness Program Manual. Review Chapter 4, Night Systems Rules of Conduct

(2) Lectures

(a) Review the following AV-8B Courseware lecture: Infrared Theory

(b) Receive the following AV-8B Courseware lecture: LUU-2 Parachute Flares

(3) Chalk Talks/Practical Application

(a) Nite Lab

(b) Night Attack Profiles

(4) Exams. None.

d. Flight and Simulator Event Training. (6 Events, 7.2 Hours).

SNS-250 1.0 NWST/RNWST S NS

Goal. Introduce TPOD employment at night. Review NVD use, normal procedures and aircraft systems management at night.

Requirement. Review cockpit setup, TPOD FLIR calibration and setup and AV-8B NATOPS ground procedures at night. Inflight, focus on sensor management of the night attack suite and introduce TPOD FLIR. Recovery shall include a GCA, CL, VNSL, FNSL, RVL, and VL.

Performance Standards

Execute all procedures IAW AV-8B NATOPS and ANTP 3-22.1-AV8B. Demonstrate proficient TPOD FLIR system setup and employment.

Prerequisite. Complete Ground/Academic Training , AS-244.

Ordinance. TPOD.

SNS-251

1.0 R NWST/RNWST S NS

Goal. Introduce NS tactical attack profiles.

Requirement. Perform 2 ramp down profiles to GP ordnance release and 1 PGM self-lase profile. Emphasize optimizing sensor/systems for target detection, acquisition and identification. Introduce target area tactics at night. Execute VFR NORDO recovery.

Performance Standards

Execute IAW Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JAWS, WARP, current flight clearances, and AV-8B NATIP publications.
Proper use of TPOD to designate targets.
Comply with Tactical Abort Parameters.
Execute briefed air-to-surface timeline.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Correct ALSA Communication Brevity.

Prerequisite. SNS-250.

Ordnance. TPOD, 2 MK-82 LD w/DSU-33, 1 GBU-16, SEL 1.

NS-252

1.3 R 2 AV-8B A NS

Goal. Introduce TPOD employment at night. Review NVD use, normal procedures and aircraft systems management at night.

Requirement. Review cockpit setup, TPOD FLIR calibration and setup and AV-8B NATOPS ground procedures at night. In-flight, focus on sensor management of the night attack suite and introduce TPOD FLIR. Review all aircraft lighting configurations. Review all night formations. Execute 1 break-up and rendezvous. Recovery shall include a GCA, CL, VNSL, FNSL, RVL, and VL.

Performance Standards

Execute all procedures IAW AV-8B NATOPS and ANTP 3-22.1-AV8B.
Demonstrate proficient TPOD FLIR system setup and employment.

Prerequisite. NS-251.

Ordnance. TPOD.

Range Requirements. RSTD, LSR.

NS-253

1.3 2 AV-8B A NS

Goal. Introduce PGM attack profiles at night.

Requirement. Execute 1 self lase, 1 buddy lase and 1 JDAM attack. Emphasize air-to-surface timelines, contract adherence, and sensor/system optimization for target detection, acquisition and identification.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JMPS CUPC, JAWS, current flight clearances, and AV-8B NATIP.
Execute briefed air-to-surface timeline.
Proper use of TPOD to generate target coordinates.
Comply with Tactical Abort Parameters.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Weapon impacts within CEP.
Correct ALSA Communication Brevity.

Prerequisite. SNS-252.

Ordnance. TPOD, 2 LGB/LGTR, 1 GBU-32/38, and expendables.

Range Requirements. RSTD, JDAM, LGB, EXP, WISS.

NS-254

1.3 2 AV-8B A NS

Goal. Introduce computed deliveries from medium and low altitude at night.

Requirement. Perform 3 30-degree and 3 10-degree LCIP/LAUT deliveries on a scored range. Emphasize air-to-surface timeline, sensor/system management and TPOD employment. Emphasize environmental effects and Mission Crosscheck Time.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV8B.
Correct weaponeering utilizing JMPS CUPC, JAWS, current flight clearances, and AV-8B NATIP.
Execute briefed air-to-surface timeline.
Proper use of TPOD to generate target coordinates.
Comply with Tactical Abort Parameters.
Valid weapon release IAW Air NTTP 3-22.1-AV8B.
Weapon impacts within CEP.
Correct ALSA Communication Brevity.

Prerequisite. NS-253.

Ordnance. TPOD, 6 Mk-76, 1 LGTR and expendables.

Range Requirements. RSTD, LGB, WISS or RKD, RNG, EXP.

NS-255

1.3 R 2 AV-8B A NS

Goal. Introduce section target area tactics at night.

Requirement. Complete 2 medium altitude transition profiles to free fall/forward firing weapon employment and 2 PGM attacks. Introduce aided target area tactics, mutual support and deconfliction. Emphasize sensor/systems optimization for target detection, acquisition and identification. Emphasize environmental effects and Mission Crosscheck Time.

Performance Standards

Execute IAW AV-8B TACSOP and Air NTTP 3-22.1-AV8B.