CHANGE NOTICE

THESE ARE SUPERSEDING OR SUPPLEMENTARY PAGES TO SAME PUBLICATION OF PREVIOUS DATE

Insert these pages into basic publication.
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NWP 3-22.5-AV8B PG
A1-AV8BB-TAC-300

TACTICAL MANUAL
POCKET GUIDE

AV-8B
AIRCRAFT

ISSUED BY AUTHORITY OF THE CHIEF OF NAVAL OPERATIONS
AND UNDER THE DIRECTION OF THE COMMANDER,
OPERATIONAL TEST AND EVALUATION FORCE.

0801LP1016245

1 APRIL 1996
CHANGE 2 - 1 AUGUST 2002

NATEC ELECTRONIC MANUAL

ADDITIONAL COPIES:
Additional copies of this manual and changes thereto may be procured by submitting Form DD 1348 to NPFC Philadelphia in accordance with NAVSUP Publication 2002, Section VIII, Part C.

LIST OF EFFECTIVE PAGES

NOTE: Text affected by current change indicated by vertical line in outer margin.

Dates of issue for original and changed pages:

Original .... 0 ....1 Apr 96 Change..... 1 .. 1 May 98 Change..... 2 ... 1 Aug 02

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 164 CONSISTING OF THE FOLLOWING:

Page No.	#Change No.	Page No.	#Change No.	Page No.	#Change No.
Title	2	14	0	37	0
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2	0	25	0	48	0
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4	0	27	0	50	0
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INTERIM CHANGE SUMMARY

The following Interim Changes have been canceled or previously incorporated in this manual:

INTERIM CHANGE NUMBER(S)	REMARKS/PURPOSE

The following Interim Changes have been incorporated in this Change/Revision:

INTERIM CHANGE NUMBER	REMARKS/PURPOSE
16	M904E4 Nose Fuze Code change.

Interim Changes Outstanding - To be maintained by the custodian of this manual:

INTERIM CHANGE NUMBER	ORIGINATOR/DATE (or DATE/TIME GROUP)	PAGES AFFECTED	REMARKS/ PURPOSE

TABLE OF CONTENTS

BRIEFING

STRIKE BRIEFING GUIDE

INTRODUCTION
ROLL CALL
TIME HACK

1. Key Personnel:
Mission Commander*
(Alternate)
- EA-6B leader
- ARM-ALDV leader
- Fighter leader
- Strike leader
- Trap leader

*Quick overhead to introduce key billet holders, set brief flow, and ensure mission representative attendance.

2. Overview:
Mission statement
- Primary target(s)
- Secondary targets(s)

Implied missions
- Assets available
- Required

3. Friendly Situation:
Ground order of battle
- Scheme of maneuver
- MAGTF objectives
- RFA's/NFA's

Air order of battle
- FEZ locations
- Air defense alert status
- Weapons status
- RTF corridors
- MRRs

4. Enemy Situation*:
- Enemy readiness/ capability
- Observed responses
- AOB/MOB/EOB
- Expected response

*Given the critical nature of this information to the formulation of the Strike Plan, brief only changes and/or specific considerations for successful execution.

5. Rules Of Engagement:
Requested
Approved modifications

6. Weather*:
Launch
Enroute
TARWI
Recovery
Illumination
Sensor prediction update
Go/No Go
Divert

*Specific mention to any changes or forecast changes to what was used for the planning process.

CONTINUED

7. Divert Field:
Procedures
NOTAMS
Frequencies

8. Strike Composition*:
*Refer to Admin card that should have been handed out.

9. Comm Plan*:
(DAY ____, ACEOI)
Nets/Frequencies:
- Covered nets
- AIRBOSS
- KY status
- Launch
- Marshall
- Tanking
- Strike (P)/(S)
- Fighter (P)/(S)
- HVU/ADA/SOF
- Link/RTF/MISREP/ TRAP

*This is the time to apply/ refer to standard comm card (programming)

*Criteria to go "PLAIN"/ Code words

Contingencies:
- Chattermark
- Min comm
- Burn through

IFF plan

10. Launch Sequence*:
EMCON condition
Lighting
Ground roll call?
Time-sequence
Net/Status/Alibis

Bump plan:
- Go/No Go/#
- Type, Loser
- Taxi plan
- Runway
- Take-off plan
- Stragglers
- Tolerances

*Have an airfield graphic to describe if required (or Admin card).

11. Marshall:
Position
Deconfliction
Timing
WX backup
C^3 procedures

12. Tanking:
Position
Altitude
Line-up
Procedures (COMM ?)
Give

Contingencies:
- Go/No Go
- Single hose
- Priority

13. AEW Responsibilities*:
Position
Expected capability
Off count/IFF check/Link
Geo reference points/ Bullseye

Back-up:
- Go/No Go
- Casualty plan

STRIKE common calls:
- SA broadcasts
- Leans

Alternate routing
Tactical requests
Fade calls (criteria)
ROLEX

FIGHTER common calls:
- Control/Cadence
- Commit authority/ criteria
- HVU fade/Scram/ Reset
- Descriptive/Directive criteria

HVU common calls:
- SA broadcasts
- Tactical requests
- Fade/Scram/Reset

Air defense alert:
- SA broadcast
- Commit/Reset
- Engagements/Leakers
- HVU fade/Scram
- Safety of flight

*This is the opportunity to brief AIC on what you expect of them, what info is important to you, and what info needs to be passed to you from other nets.

14. Electronic Warfare:
(EA-6B Leader brief this section)

Electronic attack plan (EA):
- Position/Axis graphic
- Sites*/Emitter coverage
- Timing ON-OFF
- WARM considerations

Comm jamming/ROE/ Buddy jamming ?
- (EMI)**

What ifs ?
Go/No Go

*Graphics of these plans will help to speed up the brief as well as make it easier to understand.

**How will it affect friendlies.

Electronic support plan (ES)
- Position/Axis graphic
- Emitter status
- Information flow ?
- Anticipated WARM
- What ifs ?
- Go/No Go

ARM/ALDV plan *:
(Display the ARM/ALDV timeline OVHD) **
- Leader/Coordinator
- Primary shooters/ Positions
- ARM-ALDV timeline & coordination
- Priority/Show stoppers
- Jamming coordination

Contingencies:
- What ifs ?
- Back up
- Go/No Go

*ARM/ALDV leader may brief this portion.

**End with consolidated timeline overhead with all SEAD elements if required, but *don't bog down.*

CONTINUED

15. Fighter Plan*:
(Fighter lead brief this section)

Fighter leader
PID criteria
Weapon employment
Blue on blue deconfliction

Sweep procedures:
- Position/Timing/ Formation
- Flow/Float/Strip criteria
- RTF time/Procedures

TARCAP (Escort) Procedures:
- Position/Timing/ Formation
- Float/Strip/Drop criteria
- Reset criteria
- RTF time/Procedures

HVUCAP procedures:
- CAP position/ Management
- Commit criteria
- Fade/Scram
- Reset procedures
- Information flow
- RTF time/Procedures

MiG CAP procedures:
- CAP position/ Management
- Priority/Commit criteria
- Authority
- Float/Strip criteria
- Flow/DEZ/Reset
- Delouse procedure
- CID changes ?
- RTF time/Procedures

Fighter contingencies:
- Asset reduction
- Priorities
- Go/No Go

*A graphic of the area will expedite, and make the plan easier to understand.

16. Other Asset Integration:
(Appropriate rep or the Msn Cdr)
- Feints/Deception
- TLAM
- SPECWAR
- Joint/Combined
- Attack helicopters

17. Strike Plan:
(Strike Leader brief this portion)
- Strike leader/Alternate
- Strike element flow graphic
- Timeline*

TARGET(s) Overview*:
- Locations
- Timing tolerances
- Element
- Ordnance
- Element aimpoints
- Priority

INGRESS:
- Push time(s)/Speed
- Altitude/Formation
- Fighter integration
- Routes (primary-secondary)
- Recall/Abort point procedures
- IFF on-off lines
- Fade/Lean criteria
- Fade procedures

- Required/Expected comm calls
- Reduced strike aircraft contingencies
- WX backup

TARGET AREA:
- Target area entry
- Element aimpoints
- Sequence primary/ secondary
- Aimpoint bump plan
- Timing tolerances
- Aborts
- Reattacks ?
- Target area exit
- Reset comm & deconfliction
- ROLEX procedures
- Critical information flow
- Element status
- Abort/Engaged/Jettison
- Reset
- What if ?/WX backup

*This is simply the STRIKE intro, detail will follow.
Display TGT area graphic.

18. Egress:
Route (P), (S)/Formation
Timing/Relative position/ Delouse
Accountability
BDA/MISREP required
Information flow
RTF profile
Contingencies
Wingman of opportunity
Lame Duck
Get well point

19. Recovery:
(Msn Cdr take over)

RTF Profile/BDZ Entry
Expected Flow/Priority
Divert Procedures

20. Mission Success ?:
- BDA
  - Organic
  - External
- Timing

21. TRAP:
(Msn Cdr or rescue Cdr as required)
Rescue mission commander
Wingman responsibilities
Mark position
Complete mission
Communicate to AMC
Authenticate/Localize
Establish/Turnover RESCAP...?
Turnover to AMC/RMC
Concept of rescue
Go/No Go criteria

22. Safety:
(Msn Cdr wrap up)
- NORDO
- IMC
- Kill removal
- Mort locker
- Training rules
- ROC
- SOF
- Comm

23. Loose Ends/Questions

HDC BRIEF

1. **Timing:**
   - Launch
   - Charlie

2. **Ship's PIM:**

3. **NAVAIDS/Freqs:**
   - Ship
   - Divert

4. **Weather:**
   - Ship
   - Divert
   - Sea State
     - Temperature

5. **Contingency Data:**
   - Pigeons to land
   - Pigeons to divert field
   - Ready decks
     - Position
     - NAVAIDS
     - Freqs
     - Range/bearing
   - Emergency BRC
   - Emergency Marshall
     - Assignments
     - Approach time

6. **ATC Data:**
   - Departure
     - Rendezvous radials
     - Frequencies
     - IFF/SIF modes/codes
   - ZIPLIP/EMCOM
     - procedures

7. **Hazards to Flight**

AIC BRIEF

1. **Scenario Overview:**
   - Mission statement
   - Mission objectives

2. **Parameters:**
   - Tactical callsign
   - Range times/Range
   - Frequencies
   - Debrief time

3. **Datums:**
   - CAP locations/ orientation
   - B/E Pt(s)
   - Divert fields
   - Tanker track
   - Jokers/Bingo
   - LC/LS Pt
   - Check-in procedure

4. **Mission Specifics:**
   - FTR msn(s)
   - Allowable risk
   - Altitude blocks
   - Loadouts
   - The threat
     - Aircraft
     - SAMS
   - Specific criteria
     - Hostile ID
     - Commit
     - Meld range
     - Mate range
     - Threat range
     - Lock range
     - Shoot range
     - Abort range
     - IRCM
     - Reengagement criteria

5. **Mission Execution:**
   - Precommit phase
     - Type control & bogey dope format
     - Comm cadence
     - Commit authority

ADVERSARY BRIEF

1. **Mission:**
   - Primary
   - Syllabus requirements
   - Backup

2. **Line-Up:**
   - Callsigns
   - Players
   - Aircraft
   - Pod#'s

3. **Range:**
   - TOS
   - Vulnerable window
   - Boundaries
   - Restrictions
   - Controlling agency

4. **Weather:**
   - Forecast
   - Required

5. **SPINS:**
   - Comm
     - Base (fighters/bogies)
     - FAD (fighter/bogies)
     - Common (fighter/bogies)
     - SOF-Shot common
   - Set-Ups
     - A/C type (category)
     - Mission
     - Risk
     - Weapons (category)
     - ROE
     - ID
     - Tactics
     - Safe area
   - Kill
     - Unobserved
     - No-reaction
     - Valid track (shooter evaluation)
     - Gun pipper track (time)
     - Permanent
     - Per setup
     - Re-generation from safe area

6. **What Ifs:**
   - Degraded/No GCI
   - Weather
   - Loser
   - NORDO

7. **Debrief:**
   - Time
   - Place
   - Evaluation requirements

8. **Training Rules:**
   - Spin
   - SAR

GENERAL CONDUCT

MISSION STATEMENT

Time Hack
Mission Objectives

ADMINISTRATIVE DATA

1. Intelligence Update:

General
- FLOT
- FEBA
- Force disposition

Friendly
- Supported unit locations
- Scheme of maneuver
- Supporting arms locations
- Fire control measures

Threat
- Ground forces
- EW
- Fighters
- SAM/AAA
- REC (pos, coverage)

IADS
- Capability to interfere
- System characteristics
- RWR indications
- Vulnerability to:
  - Maneuver
  - Expend
  - Jam
  - ARM
- *THREAT NOGO*
  - Determination
  - Communication
- ROE
  - Requested
  - Approved modifications

2. Weather:

Departure
Ingress
Target area
Egress
Recovery/divert
Note:
- Ceiling
- Visibility
- Temperature
- Dew point
- Humidity
- Winds
- Ducting
- Conning
- Sensor Par's
- Sun/Moon

WEATHER NOGO
- Takeoff
- FEBA
- Target area
- CAP station

3. Formation Composition

Aircraft loadouts:
- Evt and Msn #
- Callsign
- Crew
- Aircraft
- Weapons
- Fuel
- Water
- Weight
- Drag
- Spot
- Back-ups
- Succession of lead
- Bump plan
- A/A tacan plan

AIRCRAFT NOGO
- Numbers
- System status

CONTINUED

4. Timing:
- Walk
- APU
- Start
- Taxi
- Takeoff
- Range
- Push
- TOS-TOT
- Land
- Debrief
- *TIMING NOGO*
  - Rollback options
  - Stop brief

5. Fuel Management:
- Joker
- Tiger
- Lamb
- Bug
- Chicken
- Bingo
- MFRs/EFRs
- Tanking sequence
- *FUEL NOGO*
  - # of tankers/hoses

6. Communications Plan:
- ACEOI day
- Agencies
- Callsigns
- Colors
- Channelization
- Freqs
- KY use
- Called-uncalled freq changes
- Chattermark
- Get well
- Brevity codes
- EMCON
- ZIPLIP
- Authentication
- IFF
- ACEOI change over times
- *COMM NOGO*
  - KY
  - IFF {Mode 1,2,3,4)
  - One radio plan

7. Navigation Plan:
- Waypoints
  - Offsets
  - Data source and accuracy
- Overlays/Bullseye
- Tacans
- AWLS
- *NAV NOGO*
  - Platform status
  - Radio NAVAIDS

8. Sensor Plan/Prediction:
- Visual
  - Sun-Moon geometry
  - Flt environ assess
  - Lookout
  - Scan
- RWR
  - Pri/Lim/Offset
  - Comm criteria
- TV
  - FLTR/NITE
  - Avail contrast
  - Weapon effects
  - PAR(EO)
- LST
  - Code
  - CCM
  - NITE
  - Scan type
  - Designator availability
  - PAR (L)
- FLIR
  - Setup
  - Boresight
  - Cuers
  - Delta T

- Expected image
- PAR(IR)

NVG
- Set up
- Eye lane
- Moon geometry
- Albedo
- Urban lights

VRS
- Source
- Titling
- Management

Radar
- Search mode
- Range
- Azimuth
- Bar
- Altitude
- PRF
- Channel
- Mate range
- Meld range

EW Coverage
- Type of control
- Degrades
- Bullseye
- Geo-ref

SENSOR NOGO
- Min for aircraft
  - Section
  - Package

9. Flight Card Plan:

Comm
Time
Admin
Brief
Misc

10. Weaponeering:

Weapon
- Fuze-fin combination
- Station
- Preflight
- SMC codes
- Delivery mode
- Fuzing
- QTY/MULT/INTV
- Max & Min interval

System Set-up
- Site/Stby Ret
- Hot Gun
- Hot Sidearm
- Tone
- IR cool

Expendable Program
- Chaff
- Flare
- Jammer
- All
- DECM

Rad Alt
- BOMB
- GPS
- LAW
- PUC

Radar Beacon Codes

Carriage
- Release and jettison limits
- Max asymmetry
- Emergencies

WEAPON SYSTEM NOGO
- Weapons
- Computers
- Countermeasures

11. Airfield Procedures:

Post-brief tasks
Preflight
Alignment
Alert posture
Check-in
Marshall
Taxi plan
Arming
Duty runway

CONTINUED

DEPARTURE

1. **Takeoff Procedures:**
   - Arresting gear
   - Lineup order/distance
   - Takeoff type/interval
   - Communications

2. **Airfield to Rendezvous Point (RP):**
   - Route/Location
   - Formation
   - Altitude/Airspeed
   - NVG donning
   - Aircraft lighting
   - Timing
   - Fence in
   - Low altitude checklist
   - G awareness
   - Push off

RECOVERY

1. **RTF/SHORADIZ Procedures:**
   - Rendezvous
   - Formation
   - A/C lighting
   - Route/profile
   - C^3 procedures
   - IFREP/MISREP
   - Emitters on line
   - Delousing
   - Lame Duck
   - Fence out
   - Alternate airfields
     - Routing
     - Fuel required

2. **Landing Patterns:**
   - NVG Removal/Storage
   - IFR
     - Penetration
     - Recovery/NVG storage
   - VFR
     - Break interval/ direction
     - Straight-in
   - Landing type
     - Primary/secondary
     - Spot/arresting gear
   - VSTOL performance
   - Order & interval
   - Dearm
   - Taxi
   - Updates

MISCELLANEOUS

1. **Support Assets:**
   - Tankers
   - EW
   - SEAD
   - ARM
   - Fighters
   - Recce
   - Transport
   - C^3
   - *SUPPORT NOGO*
     - Determination of communication

2. **Contingencies:**
   - Marginal weather
     - Ingress
     - Target area
     - CAP station
     - Egress

Fall outs
Before takeoff
After takeoff
Single A/C requirements
Threat change
Enroute/Target

3. Misc./Emergencies/SAR:
Abort
Immediate landing
Jettison considerations
Asymmetry
Damaged A/C
NORDO (day-night)/ LCLS/HEFOE
Inadvertent IFR
Birdstrike
Low alt. flameout
Midair
Departure/spin
Ejection (NVG)
CSAR-TRAP
Callsign
Freqs
Procedures
E&E plan
Safe/areas
Broadcast times
Authentication

4. Training Rules/ROC/ Restrictions:
Currency/Proficiency/NS req's
Crew rest/Crew day
ACM training rules
LAT rules of conduct
Tactical abort parameters
Training area
Range restrictions
Aircraft limitations

5. Alternate Missions

CLOSE AIR SUPPORT (CAS) EXECUTION

1. **Ingress Routing (RP to target area):**
   - Route
   - Formation
   - Altitude
   - Airspeed
   - Timing
   - Fuel
   - Update plan
   - Sun & Moon effects
   - C^3 requirements
   - Threat updates
   - Coordination
   - Deconfliction
   - Reactions to threats
   - Emitters off line

   Contingencies:
   - Weather abort
   - Inadvertent IMC

2. **Holding:**
   - Location
   - Orientation
   - Formation
   - Altitude
   - Airspeed
   - PPS push time
   - Coordination
   - Deconfliction
   - Update plan
   - Brief prep
   - Reactions to threats

3. **Briefing:**
   - PPOC
   - Immediate
   - Flt responsibilities
   - Comm cadences
   - Min hack
   - System initialization
   - Alpha check
   - Systems check
   - Attack-weapons audible
   - Fence check

4. **Attack:**
   - Update plan
   - Formation
   - A/C lighting
   - Altitude
   - Airspeed
   - Attack geometry
     - GTL & max ord
     - Adjust for restrictions & DTL
     - FAC(A) position (F/W R/W)
     - HELO attack positions
     - Sun & Moon effects
     - Expendable use
     - Comm cadence
     - Acquisition predictions
     - Scan
     - FAC correction
   - Attack parameters
     - Delivery mode & back-up
     - Sensor management
     - HUD MIL correction from mark
     - ITP
     - Release parameters
     - Sight angle
     - Error sensitivities
   - Tactical abort criteria
     - Reactions to threats
     - Imbedded suppression

5. **Terminal Control:**
   - Required comm calls
   - Reasonable assurance criteria
   - Brevity codes

6. Off Target:
- Initial moves
- Expendable use
- Comm cadence
- Reattack criteria/blue print
- BDA

7. Egress Routing
- Route
- Formation
- A/C lighting
- Altitude
- Airspeed
- Timing
- Fuel
- Update plan
- Sun & Moon effects
- C^3 requirements
- Misrep
- Coordination
- Deconflict
- Reaction to threats
- Minimum
  - Expendables
  - Ord, & fuel
- Battle damage check

Contingencies:
- Battle damage
- Low fuel
- Hung ordnance

ARMED RECONNAISSANCE EXECUTION

1. **Ingress Routing (RP to TAI):**
   - Route
   - Formation
   - A/C lighting
   - Altitude/Airspeed
   - Timing
   - Fuel
   - Update plan
   - Sun & Moon effects
   - C^3 requirements
   - Threat updates
   - Coordination
   - Deconfliction
   - Reactions to threats
   - Emitters off line

   Contingencies:
   - Weather abort
   - Inadvertent IMC

2. **NAI/TAI Search Zone:**
   - Vital intelligence
   - Priority targets
   - GEO orientation
   - Expected target locations
   - Situational awareness pass
   - Search type
   - System prep
   - Detail grid track
   - Formation
   - Airspeed
   - Altitude
   - Search sector
     - Shooter/cover contract
     - Leader/wingman contract
     - Footprint predictions
     - Search orientation
       - Same side/between section
       - Mated/melded
   - Sensors management
   - Target size vs apparent MIL size at slant range
   - Scan tech
   - Guides

3. **Target Prosecution:**
   - Destruction desired
   - Reactive weapons audible
   - Attack geometry
     - Direct
     - Transition
     - Delayed
     - Sun & Moon effects
     - Expendable use
     - Marking/Illumination
     - Comm cadence
   - Attack parameters
     - Sensor management
     - Rampdown parameters
     - Delivery mode & back-up
     - ITP
     - Moving target corrected aimpoint
     - Release parameters
     - Sight angle
     - Error sensitivities
     - Tactical abort criteria
     - Reactions to threats
     - Imbedded suppression
     - C^3 requirements

4. **Off Target:**
   - Initial moves
   - Expendable use
   - Comm cadence
   - Reattack criteria
   - BDA

Minimum to continue
- Expendables
- Ordnance
- Fuel
- Reshuffle plan

5. Egress Routing:

Route
Formation
A/C lighting
Altitude/Airspeed
Timing
Fuel
Update plan
Sun & Moon effects
C^3 requirements
IFREP/MISREP
Coordination
Deconfliction
Reactions to threats
Battle damage check
Contingencies:
- Battle damage
- Low fuel
- Hung ordnance

AERIAL INTERDICTION EXECUTION

1. Ingress Routing (RP to target):
- Route (prim, alt)
- Formation
- A/C lighting
- Altitude
- Airspeed
- Timing
- Fuel
- Update Plan
- Sun & Moon effects
- C^3 requirements
- Threat updates
- Coordination
- Deconfliction
- Reactions to threats
- Emitters off line

Contingencies:
- Weather abort
- Inadvertent IMC

2. Attack:
- IP assignment
- Tgt & aim point assignment
  - Primary/Alternate/ Dump
  - Flex criteria/authority
- Formation
- A/C Lighting
- Altitude
- Airspeed
- Attack geometry
  - Target area blueprint
  - Timing
  - Altitude
  - Deconfliction
  - Sun & Moon effects
  - Expendable use
  - Comm cadence
- Attack parameters
- Acquisition predictions
- Scan
- Sensor management
- Rampdown parameters
- Delivery mode & back-up
- ITP
- Release parameters
- Sight angle
- Error sensitivities
- Tactical abort criteria
- Reactions to threats
- Imbedded suppression

3. Off Target:
- Initial moves
- Expendable use
- Comm cadence
- Reattack criteria
- BDA
- Alt/dump target plan

4. Egress Routing:
- Route
- Formation
- A/C Lighting
- Altitude
- Airspeed
- Timing
- Fuel
- Update plan
- Sun & Moon effects
- C^3 requirements
- Coordination
- Deconfliction
- Reactions to threats
- Battle damage check

Contingencies:
- Battle damage
- Low fuel
- Hung ordnance

ANTI-AIR WARFARE EXECUTION

1. Ingress Routing (RP to CAP):
- Route
- Formation
- Search contracts
- Altitude
- Airspeed
- Timing
- Fuel
- Sun & Moon effects
- C^3 requirements
- Threat updates
- Coordination
- Deconfliction
- Reactions to threats
- Emitters off line

Contingencies:
- Weather abort
- Inadvertent IMC

2. Pre-commit:
- Weapons conditions
- Declaration authority
- System management
  - Search/sample contract
- CAP orientation
- FEZ limits
- Formation
- Altitude
- Airspeed
- Turns
- Lookout
- AIC employment
  - Broadcast format
  - Comm cadence
  - Status reports
  - Group definition
    - Number
    - Position
    - Aspect
    - Formation
    - Geo-ref
- Escort
  - Strike route
  - Strike timing
  - Sweep position
  - TARCAP position

3. Commit:
- Commit criteria
- Commit Authority
- Declaration
- Requirements
  - Bandit/Hostile
- ROE
  - BVR/VID
- Comm Cadence
- Formation
- Altitude
- Airspeed
- Offset/flow
- RWR assessment
- Expendables use
- RWR tactics
- Targeting contracts
- Transition tactical
- BRAA
  - Meld range
  - Aspect
    - Nose on
    - Flanking
    - Beaming
    - Dragging
- Sorting contract
  - Sort Range
- Threat/drop criteria
- Float/strip criteria
- Lock range
- VID criteria
  - Gameplan
  - Eyeball/shooter
  - Hostile declaration

CONTINUED

- Visual sort contract
- Shot contract
  - Targeting assignment
  - Shoot range
  - R_{MAX}
  - R_{NE}
- Abort/reset
  - Criteria
  - Range
- Intercept geometry
  - Flow
  - Counter radar
  - Expendable use

4. The Merge:

- Airspeed
- Offensive split
- IRCM
- Visual sort
- Engaged criteria
  - First moves
  - Establishing roles
  - Comm
  - Weapon employment
  - AIC responsibilities
  - Expendable use

5. Disengagement/Flow Through:

- Direction
- Airspeed
- Altitude
- Tallies
- Turns
- Fuel
- AIC input/RWR use
- Expendable use
- Comm

6. What ifs:

- Fighters in the dark
- Bogies in the dark
- Bogey jinks
- Short setup
  - Meld range
  - Roles
  - Bogey shoots BVR
  - Bogeys split
  - IRCM
  - Counter radar

7. Egress Routing

- Route
  - Formation
  - Altitude
  - Airspeed
  - Fuel
  - Sun & Moon effects
  - C^3 requirements
  - Coordination
  - Deconfliction
  - Reaction to threats
  - Battle damage check

- Contingencies:
  - Battle damage
  - Low fuel
  - Hung ordnance

HELO ESCORT

1. **T&R Requirements/ Sortie Sequence**

2. **Ingress:**
   - Helo route
   - Check points
   - Formation
     - Attached/detached
   - A/C lighting
   - Comm
   - Deconfliction
   - Obstructions
   - Terrain
   - R/W escort
   - Scatter plan
   - Ground threat attack
     - Areas of responsibility
     - Proximity to friendlies
     - Clearance to fire/ release
   - Air threat attack
     - Threat commit
       - Authority
       - Range
       - Threat priority
       - ROE
   - Threat reaction
   - Down aircraft

3. **LZ Prep**
   - Profile
   - Formation
   - Comm cadence
   - Lighting
   - Target marking
   - R/W attack positions
   - Attack geometry
     - Transition to CAS
   - Attack geometry/ parameters
     - GTL & MAX ord
     - Adjust for restrictions & DTL
   - FAC(A) position (F/W R/W)
   - Helo attack positions
   - Sun & moon effects
   - Expendable use
   - Acquisition predictions
   - Scan
   - FAC correction
   - Attack Parameters
     - Delivery mode & back-up
     - Sensor management
     - HUD MIL correction from mark
     - ITP
     - Release parameters
     - Sight angle
     - Error sensitivities
   - Tactical abort criteria
     - Reactions to threats
     - Imbedded suppression

4. **Terminal Control:**
   - Required comm calls
   - Reasonable assurance criteria
   - Brevity codes

5. **Off Target:**
   - Maneuvers
   - Expend use
   - Role switch
   - Threat reaction

6. **Egress:**
   - Profile
   - Formation
   - A/C lighting
   - CP's
   - C^3/BDA
   - Deconfliction

CONTINUED

Threat reaction
Helo RNDV
Coverage for tactical withdraw from LZ

7. Safety Considerations:
Who controls ordnance
FAC
FAC(A)
DIV
SEC lead
Master arm
Deconfliction
Abort criteria
Lighting
IN/OUT/LZ
AV8/Helo

RESCAP

1. **Locate & ID Downed Aircraft and Pilot:**
   - SAR grid system
   - Bullseye calls
   - Pass information to
     - DASC
       - Downed pilot/aircraft location
         - Lat/long
         - UTM

2. **Attempt Contact With Downed Pilot**
   - Ensure authentication of downed pilot
   - Radio communication/ freqs
     - Daily changing call signs
     - Authentication cards
   - Visual signals

3. **Determine Pilot's Condition (Injuries)**

4. **Protective Tactics/ Target Prosecution**
   - NFA/RFAs
   - Profile
   - Formation
   - Comm
   - A/C lighting
   - Target marking
   - Roles/Switch
   - Threat reaction
   - Expendable use
   - Attack plan
   - Primary/Secondary delivery/Sensor
   - Reattack
   - Abort

5. **TRAP Ingress Escort:**
   - Helo route
   - Threat location
   - Formation
   - Comm
   - Deconfliction
   - Obstructions
   - Terrain
   - R/W escort actions
   - Air threat attack
     - Threat commit
       - Authority
       - Range
     - Threat Priority
     - ROE
   - Ground threat attack
     - Areas of responsibility
     - Proximity to friendlies
     - Clearance to fire/ release
     - Transition to CAS
   - Attack geometry/ parameters
     - GTL & MAX ord
     - Adjust for restrictions & DTL
     - FAC(A) position (F/W R/W)
     - Helo attack positions
     - Sun & moon effects
     - Expendable use
     - Comm cadence
     - Acquisition predictions
     - Scan
     - FAC correction
   - Attack parameters
     - Delivery mode & back-up
     - Sensor management
     - HUD MIL correction from mark
     - ITP

CONTINUED

Release parameters
Sight angle
Error sensitivities
Tactical abort criteria
Imbedded suppression
Threat reaction
Downed A/C

6. TRAP Egress Escort:
Helo route
Comm/C[3]
Formation
A/C lighting
Threat location
Helo RNDV
Deconfliction
Threat reaction

7. TRAP Aircraft Down

8. Station Relief:
Notify DASC/TAOC/EWC/ABCCC for relief (15 minutes prior to egress if required)

SCAR/FAC(A) BRIEF

1. **Mission Statement:**
   - Time hack
   - Mission objectives
   - Threat scenario

2. **Formation Composition and Aircraft Loadout:**
   - Event/mission numbers
   - Line up
   - Callsigns
     - CAS elements
     - FAC(A)

3. **Ranges:**
   - Boundaries
   - Course rules
   - RSO

4. **Comm Plan:**
   - Controlling agencies (call sign, color, freq)
     - Air boss
     - TACC
     - TAOC
     - DASC
     - TAC (A)
     - FAC (A)
     - TACP
   - Comm Jam
     - Burn through
     - Chattermark
     - Burst transmissions
   - Secure voice
   - Authentication

5. **Prowords:**
   - Base altitude
   - Base number
   - Chattermark
   - Continue
   - Change
   - Cancel
   - Abort
   - Joint laser terminology
     - "10 seconds"
     - "Laser on"
     - "Spot"
     - "Terminate"
   - Safety of flight
     - Plain language

6. **Check In: (CP/Time/Altitude/Exceptions)**

7. **Contact/Initial Points:**
   - Holding

8. **9-Line Brief:**

	Datum
LINE 1	IP
LINE 2	HDG (L/R)
LINE 3	DIST
LINE 4	ELEV
LINE 5	DESC
LINE 6	COORD
LINE 7	MARK
LINE 8	FRIENDLIES
LINE 9	EGRESS
TOT/TTT	

   - Striker response
     - "Roger 6+00"
     - "Say again hack"
     - "Say again time"
     - "Say again line"

9. **Weapons Plan:**
   - Amount/Type per pass

CONTINUED

10. Attack Terminology:
"IP inbound"
"Popping/Rolling In From..." (Cardinal direction)
"Wings level"

11. Location/Altitude of players:
FAC(A)
Escort
Strikers
Shooter
Cover

12. SEAD (GCE, ACE, Imbedded)

13. Use of Illumination Flares

14. Mark and Target Acquisitions:
Type (WP/llum/Laser/HE/Talk-on)
0+30 prior to TOT

15. "Cleared Hot":
Reasonable assurance

16. Hit Corrections:
Cardinal direction
Distance (meters)

17. Reattack:
Striker/FAC concurrence

18. BDA From FAC(A):
Plain language

19. MOS Rep:
Info flow

20. Mutual Support:
FAC/FAC(A)/ Strikers

21. FAC(A) Recovery:
Single
Formation

22. Training Rules, ROC and ROE

23. Contingencies:
Threat change
Weather

24. Emergencies:
Assistance to FAC(A)
RNDV point and altitude

25. Questions

FAM/FORM EXECUTION

1. **T&R Requirements/ Sortie Sequence**

INSTRUMENT/CROSS COUNTRY

1. **T&R Requirements/ Sortie Sequence**

2. **Departure:**
   SIDS

3. **Arrival:**
   STARS
   Type approach
      DH/MDA/MINS
   Alternates
   Airfield data
      Field elevation
      Frequencies
      Location of touchdown
      Arresting gear location
      Concrete
   Taxi plan
   Base Ops/T-line
   Temperature/winds

4. **Enroute:**
   Route
   Formation
   Altitude
   Airspeed
   Timing
   Fuel
   Update plan
   Sun & Moon effects

   Contingencies:
      Lost sight
      Deviation for weather

5. **Post Flight:**
   Battery off
   Call SDO "Safe on deck"

6. **Miscellaneous:**
   PPR's/orders/fuel card/ tool packet

NAV EXECUTION

1. **T&R Requirements /Sortie Sequence**

2. **Marshall:**

3. **Route:**
   Route (primary/ alternate)
   Formation
   Altitude
   Airspeed/Ground speed
   Timing
   Map study
      Checkpoint
      Update plan
      Route restrictions
      Terrian type
      Obstructions
      Sun/Moon effects
   Contingencies:
      Weather
      Inadvertent IMC

TAV-8B INTER-COCKPIT BRIEF

1. **T/B Differences:**
   - Fuel split/load
   - Prop functions
   - DDI/UFC commonality
     - CUE function
   - Rear cockpit lack of gauges/switches
   - Rear cockpit switches to forward
   - Vane location
   - Canopy
   - G-limits/prohibited maneuvers
   - Mass induced roll oscillations

2. **Flight/Lookout Responsibility**

3. **ICS:**
   - Controls
   - Required calls
     - ICS check
   - Canopy movement
   - APU start
   - Engine start
   - Arming/Safe of the seat
   - Takeoff and landing checklist
   - Pass of control

4. **Passing of controls:**
   - ICS in/out

5. **Emergencies:**
   - Lost ICS/comm
   - Out of control (falling leaf)
   - Ejection
     - Eject select
     - Arming of seat
     - Who pulls

AERIAL REFUELING EXECUTION

1. **T&R Requirements /Sortie Sequence**

2. **Tankers:**
   - Type
   - Call sign
   - Frequency
   - Give
   - Track

3. **Procedures:**
   - Check-in
     - Communication
     - Deconfliction
     - Rendezvous
     - Precontact
     - Nose cold, switches safe
   - Approach/Contact
     - Missed approach/ abort criteria
     - Dead hose
     - Canopy strike
     - Streaming fuel
     - Emergency breakaway
     - Tanker lights
   - Disengage/rejoin/ check-out

AIR TO GROUND (RAKED RANGE) EXECUTION

1. **T&R Requirements /Sortie Sequence**

2. **Marshall:**
   BST check

3. **Range:**
   Boundaries
   Course rules

4. **Target Entry:**
   Route
   Formation
   A/C Lighting
   Altitude
   Airspeed
   Update plan

5. **Target Procedures:**
   Pattern/Interval
   Comm cadence
   Sensor/Mode gameplan
   Expendable use
   Roll-in/Adaptive technique
   Tracking technique
      Sight picture
      Check point
      Error analysis
   Off target maneuvers

6. **Off-Target Rendezvous:**
   Formation
   A/C lighting
   Altitude
   Airspeed
   Direction
   Hung ordnance check

7. **Safety:**
   Systems fixation
   Safe escape
   Abort criteria (airspeed, altitude, FPA)
   Master arm considerations

LAT EXECUTION

1. **T&R Requirements /Sortie Sequence**

2. **Range:**
   - Boundaries
   - Course rules

3. **Basic:**
   - Lookout/Nav responsibilities
   - Route
   - Formation
   - A/C lighting
   - Airspeed
   - Turns
     - Comm-in
     - Min-comm
   - Ridgeline crossings

4. **Advanced:**
   - Small descent
   - 10° rule
   - 50 % rule
   - Dive recovery
   - Maneuvers
     - VJ
     - SOJ
     - TOJ
     - ROJ
     - Notch out/in
     - Resume
     - SAM break
     - Guns jink
     - MAC
     - Expendable use
     - Jink
     - Jink R/L 30-60
     - Jink R/L 60-120
   - Circuit
     - Route
     - Formation
     - Altitude
     - Airspeed
     - Comm cadence
     - Performance and dangerous errors/ maneuvers
   - Attacks
     - Target
     - Weapons parameters
     - Release mode (primary/secondary)
     - Profiles

ACM (BFM) EXECUTION

1. **T&R Requirements/ Sortie Sequence**

2. **Range:**
   - Boundaries
   - Course rules

3. **Bogey:**
   - Capabilities
   - Weapons
   - Target mil relationship

4. **Perch Setups:**
   - Definitions
   - Learning objectives
   - Initial positions
   - First moves
   - Countermoves
   - Cause and effect
   - Common errors

5. **Neutral Setups:**
   - Definitions
   - Learning objectives
   - Initial positions
   - Weapons employment/ denial
   - Merge options
   - First moves
   - Countermoves
   - Common errors
   - Disengagement

6. **Section Maneuvers:**
   - Formation responsibilities
   - Intercept tactics
     - Use of GCI
     - Intercept timeline
     - Pre-merge considerationsMerge gameplan
       - VID requirements
         - Eyeball/shooter
         - Hostile declaration
         - Visual sort contract
         - Targeting assignments
       - Engaged fighter
         - Definition
         - Responsibilities
       - Free fighter
         - Definition
         - Responsibilities
       - Bugout
       - Disengagement

7. **Weapon Employment:**
   - Weapon
   - Number
   - Envelope
   - Limits
   - Blue on blue considerations
   - Kill removal

8. **Safety:**
   - Master arm
   - ACM training rules

EW BRIEFING GUIDE

1. **T&R Requirements/ Sortie Sequence**

2. **Profiles:**
   - Checkpoints
   - Terrain
   - Formation
   - A/C lighting
   - Altitude
   - Airspeed

3. **Tactics**
   - Stimulus/initiation
   - Advanced maneuvers
     - Jink
     - Jink R/L 30-60
     - Jink R/L 60-120
     - Notch out/in
     - Resume
     - Defending
     - Yoyo
     - Press
     - Sam break
     - Guns jink
     - MAC
     - Terrain masking
     - Expendable use

4. **Formation Responsibilities**

5. **ALR/ALE/ALQ:**
   - Operation
   - BIT
   - Threat review
   - Expected RWR indications
   - Interpretation
   - Maneuver
   - Expendables use

6. **Comm Cadence:**
   - Radio call
   - Response

A/A GUNNERY

1. **T&R Requirements /Sortie Sequence**

2. **Banner Pattern Procedures:**
   - Spacer pass
   - Departure angle
   - Perch
   - Roll-in
   - Banner tracking
     - Shoot criteria
     - Abort criteria
   - Range estimation
   - Catch-up
   - Fall-back
   - Shoot for recovery
   - Perch recovery

3. **Safety Considerations:**
   - Firing cone limitations
   - Master arm
   - Deconfliction
   - Tractor & target bubbles
   - Waveoff
   - Prohibited maneuvers

HELOCOPTER ATTACK BRIEFING GUIDE

1. **T&R Requirements /Sortie Sequence**

2. **Threats:**
   - Helo maneuvering capabilities & weapons
   - Fixed wing threat & weapons
   - SAM & AAA threat

3. **Setups:**
   - Learning objectives
   - Initial positions
   - First moves
   - Countermoves
   - Cause and effect
   - Common errors

4. **Section Maneuvers:**
   - Formation responsibilities
   - Sensor management
   - Acquisition and sightkeeping
   - Engaged & free fighters: Definition & responsibilities
   - Disengagement
   - Helo threat countermeasures
   - SAM & AAA countermeasures

5. **Weaponeering:**
   - Weapon
   - Number
   - Envelope/Frag avoidance
   - Limits
   - Preflight

6. **Safety:**
   - Master arm
   - Deconfliction
   - Prohibited maneuvers

FBO/FCLP

1. **T&R Requirements /Sortie Sequence**

2. **Recovery:**
   VFR
   IFR
   Course rules

3. **Pattern:**
   Altitudes
   Airspeeds
   Engine monitoring
   Procedures
   Techniques
   EMCON signals
   LSO comm
      Advisory
      Mandatory
      Expected response

4. **Landing Sites:**
   Dimensions
   Surface
   Overrun & side areas
   Obstructions
   Parking area
   Parking procedures
   Hot refuel procedures

5. **T/O Procedures**

6. **Safety Procedures:**
   Rollback
   No lift-off
   Over-rotate
   Waveoff
   Water failure

CARRIER QUALIFICATION

1. **T&R Requirements /Sortie Sequence**

2. **HDC Brief:**
   - PIM
   - Nearest divert
   - Airspace restrictions
   - Comm
   - EMCON
   - Hold-down fuel

3. **Ship Procedures:**
   - Preflight
   - APU
   - Alignment
   - Back-up A/C
   - Check-in
   - Taxi
   - Nogo VTO
   - Hand signals
   - EMCON
   - Hot refuel

4. **Recovery: Case I, II, III:**
   - Pattern
     - Altitudes
     - Airspeeds
     - Procedures
   - LSO comm
     - Advisory
     - Mandatory
     - Expected response
   - Line-up cues

5. **Safety Procedures:**
   - Rollback
   - No lift-off
   - Over-rotate
   - Waveoff
   - Brake fail
   - Eng runaway
   - Water failure
   - Over water ejection

DE-BRIEFING GUIDE

1. **Review Mission Objectives**
2. **Plan**
3. **Brief**
4. **Execution:**
   Admin out/back
   Tactical
   Aircrew coordination
5. **Mission Success**
   Accomplishment of objectives
6. **Lessons Learned**
7. **Fines/Bet**
8. **Intel (S-2)**
   BDA
   Threats encountered
   Uncharted obstructions

ACM TRAINING RULES

General

1. Must have qualified and current aircrew.
2. Must have designated ACM area.
3. A g awareness maneuver must be performed.
4. Departure/spin procedure must be briefed.

Weather

1. Day, VMC, 5 miles visibility with a defined horizon.
2. No ACM into or through an overcast or undercast.
3. The top of a broken/overcast is the simulated ground level.
4. Remain clear of clouds by 2000 feet vertical, 1 nm horizontal at all times.
5. If the weather is less than the minimum required for ACM, but still VMC, intercepts may be conducted if prebriefed and carried no further than 180° of turn.

Altitude Restrictions

1. No ACM below a hard deck of 5,000 feet AGL.
2. No high AOA, slow speed maneuvering below a soft deck of 10,000 feet AGL.
3. No guns defense below the soft deck.
4. Aircraft below 5,000 feet AGL are limited to a wing rock or 180° of turn. USMC & USN aircraft may pitch up above 5,000 feet AGL to engage in ACM.

Separation and Avoidance

1. Always assume the other aircraft does not see you.
2. Maintain a minimum of 500 feet separation between aircraft.
3. Nose high goes high. The low/nose low aircraft has the responsibility for flight separation.

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4. Head on passes with a TCA > 135° will maintain the established trend; if no trend exists, both aircraft give way to the right for a left to left pass. If doubt exists, broadcast your own intentions or exaggerate your aircraft deconfliction movement.
5. Up sun aircraft has responsibility for collision avoidance, if the up sun aircraft loses sight, say so and remain predictable. If the down sun aircraft loses sight, say so and break off the attack in lag.
6. Down hill chaser monitor altitude and attitude of the defensive aircraft. Break off the attack with a 90° turn away prior to approaching the applicable deck.
7. No forward quarter missile attacks (within 20° of the targets nose) within 9,000 feet. Complete attention will be given to flight separation.
8. No forward quarter gun attacks with a TCA > 135°.
9. No flares when defending against a gun attack.
10. Break off gun attacks at 1,000 feet separation.
11. Blind lead turns area prohibited.
12. Altitude separation will be established for intercepts. Without radar or visual SA, be in assigned block by 10 nm forward quarter, 5 nm beam, and 2 nm rear quarter.

Communication Requirements

1. All aircraft must have operable communications, crewed aircraft an operable ICS.
2. All aircraft monitor guard.
3. 1V1's must be on a common frequency.
4. Flights of two or more versus one or more may operate on separate frequencies if each flight is under positive control of separate GCI controllers with a senior air director supervising and monitoring both frequencies; or if each flight is under positive control of separate RTO's on a TACTS range.

ACM and Ground Attack Interface

1. Aggressor aircraft will break off attacks below 10,000 feet within 3 nm of the target area or any time an aircraft is in an ordnance delivery maneuver.
2. Aircraft with A/G ordnance, excluding captive carry training ordnance, are limited to 180° of turn.
3. Aggressor aircraft shall not descend below the altitude of any attack aircraft and avoid the dead six, co-altitude area of low flying attack aircraft.
4. Aggressor aircraft will discontinue attacks on low altitude strike/escort aircraft following a wing rock or 180° of turn.

Termination of ACM

The term "KNOCK IT OFF" will be used to stop an entire set-up exercise. The term "TERMINATE" will be used to stop a single or local engagement. An engagement will be terminated when any of the following occurs:

1. Any training rule is violated.
2. "KIO/TERMINATE" is called by anyone.
3. Any spin, departure, or drag chute deployment.
4. Any aircraft goes NORDO.
5. Loss of S/A or any dangerous situation develops.
6. Bingo fuel is reached.
7. An interloper becomes a factor.
8. Briefed learning objectives are achieved.
9. Any aircraft rocking wings in level, 1g flight.

Fixed Wing Versus Helo

1. Initial lat qual is required.
2. At least one pilot of a multi-ship FW shall be a designated ACM flight leader.
3. Minimum weather: 3,000/5 with a defined horizon.
4. No slow speed, high AOA maneuvering below 10,000 feet.
5. Minimum altitude:
   0 to 10° dive = 500 feet
   > 10° dive = 1000 feet.

CONTINUED

6. No supersonic flight.
7. Do not directly overfly helos.
8. In case of lost sight, fixed wing climb above 3,000 feet; helo's climb above 300 feet.

LAT RULES OF CONDUCT

1. LAT Currency

	CL BUT NO LOWER THAN		
	SINGLE	SECTION	DIVISION
15 DAYS OR LESS	200 ft.	200 ft.	500 ft.
16 - 30 DAYS	300 ft.	300 ft.	500 ft.
OVER 30 DAYS	500 ft.	500 ft.	500 ft.

2. Weather requirements: 3,000/5, defined horizon with continuous assessment of environment.

3. Minimum airspeed: 380 KIAS

4. Wingman never flies below lead's altitude.

5. Wingman is responsible for deconfliction and collision avoidance.

6. Minimum altitude for singles or sections is 200 feet AGL or CL. A division will be no lower than 500 feet AGL with 1 nm.

7. MAC is achieved in a wings level descent from CL (never in a turn), and must be chased by a current LATI on an approved LAT course.

8. MAC is a single aircraft task only.

9. An operational radar altimeter, HUD, and INS velocity vector is required for all advanced vertical maneuvers.
10. A g-awareness maneuver will be performed prior to commencing LAT.

11. After a "KNOCK IT OFF" call, all aircraft in the flight will roll wings level and climb-to-cope.

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12. All aircrew will "KNOCK IT OFF" for any of the following conditions:

    a. Any A/C descends below the minimum pre-briefed altitude.
    b. Any A/C descends in a turn that was intended to be level.
    c. Any A/C goes NORDO.
    d. Any aircrew loses situational awareness.
    e. Any unsafe condition occurs.

13. Following a KIO, LAT will not be resumed without verbal concurrence of all participating aircrew.

14. Additional Night LAT requirements:

    a. Day flight within previous 15 days.
    b. Without MAGTF/Wing Commander waiver, aircraft must have following equipment: (T&R VOL I, 9002)
        (1) Accurate INS with HUD and VV
        (2) NVG compatible cockpit lighting
        (3) Radar altimeter
        (4) Operating anti-collision light
        (5) Two operable NVG batteries
    c. Review of DMA CHUM in training area and along proposed route.
    d. Review of all obstacles and obstructions above 200 feet AGL within 5 nm of route.
    e. Brief MSL Emergency safe altitudes for route and operating area.
    f. Wingman shall not maneuver to place Lead A/C under the VV inside 1 nm.
    g. An airborne environmental assessment shall be conducted to evaluate:
        (1) Lunar azimuth and white out zones
        (2) Dynamic shadowing
        (3) Visibility and ground texture
        (4) Horizon definition
        (5) Ambient light level
        (6) Ceilings

(7) NVG and FLIR performance

Following this evaluation, the flight may proceed at an altitude set by the flight lead.

h. Night LAT shall be terminated for the following additional reasons:
   (1) NVG scintillaltion or battery failure
   (2) Unplanned lost sight of lead
   (3) Loss of INS, RALT, or HUD

15. Night Systems Illumination Requirements:

a. Initial FAM: Phase > 20 % and > 30° elevation (20/30)
b. Initial LAT: Phase > 20 % and >30° elevation (20/30)
c. For NSQ LAT: 0.0022 LUX
d. For NS < 0.0022: NSQ, remain above 1000 feet AGL
   *Non NSQ, remain above 1000 feet AGL, *with* an NSI.

TACTICAL ABORT PARAMETERS

Air-To-Ground Ordnance Delivery

A pilot will abort any ordnance delivery maneuver, and will not drop or fire ordnance if:

1. General:

    a. A (valid) "Break X" is observed.
    b. Minimum Fuze Arm time is exceeded (valid PUC).
    c. The minimum FRAG avoidance time is violated.
    d. The A/C apex is inside the MAP, or the preplanned FPA is exceeded by:

        ± 5° for a 10° FPA
        ± 7° for a 20° FPA
        ± 10° for 30° + FPAs.

2. Close Air Support:

    a. The CAS brief is not fully understood.
    b. It is determined that you will be more than *one minute late* or more than *30 seconds early* at the target without approval from or coordination with the Terminal Controller.
    c. Anyone transmits "Abort".
    d. Correction from the mark is more than one half the distance from the target to the friendly position, and in the direction of the friendly position.

RULES OF ENGAGEMENT

Navigation/Minimum Risk Routes:

1. Restricted/No-fly areas.
2. Speed limits.
3. Altitude limits.
4. Base defense zone procedures.

A/G Ordnance:

1. Master Arm enable: (When/Where)
2. A/G Master Mode: (When/Where)
3. "Cleared Hot" is/is not required.
4. "Legal" Targets/Arrays: (Types/Areas/Location)
5. "Illegal" Targets/Arrays: (Types/Areas/Location)
6. Target ID : (Features/Requirements)
7. Jettison and Dump : (Authority/Where)

A/A Ordnance:

1. Air Defense Warning Condition: (Red/Yellow/White)
2. Weapon status: (Hold/Tight/Free)
3. Weapon checks: (Procedure/Where)
4. Commit criteria:
5. Master Arm enable: (When/Where)
6. A/A Master Mode: (When/Where)
7. Clearance to fire: (Authority/Terminology/Net/Responsiveness)
8. PID Criteria/Declaration Authority

Self Protect:

1. IFF: Modes/Codes/Turn-on line)
2. DECM: (Mode/Turn-on line)
3. Chaff and flares: (When/Where)
4. MRRs:
5. Air Defense Alert Net: (Lame Duck/Scram)

ACTI DACT DEBRIEFING GUIDE

1. Validate shots and record their times prior to the debrief.
2. Review any administration problems and alibi's.
3. Review training and mission requirements.
4. Review fighter gameplan and bogey tasking. Include PID criteria and shot ranges.
5. Briefly reconstruct each run on the board.
   a. At the first significant event (i.e., fighter targeting or bogey weapons employment), confirm the bogey gameplan.
   b. When merge occurs, do not get wrapped up with drawing every turn. Do, however, note the results of that merge (i.e., shots, defense, kills).
   c. Encourage bogey participation, ask their evaluation of the fighter's execution.
6. If using TACTS, play the tape next (stopping the playback to highlight any learning points). TACTS tape emphasis should include evaluation of:
   a. Comm
   b. Fighter radar interpretation and quality of radar work.
   c. Radar missile defenses
   d. Critical decisions
7. Ask for any final inputs from the bogeys and evaluate mission accomplishments for each run.
8. Repeat for each set, then *clear the bogeys off.*
9. If not using TACTS, then review one VTR tape for fighter comm.
10. Regardless of TACTS use, ensure all VTR tapes are viewed for radar work (armpit cameras used) and significant RWR events.
11. Wrap up the debrief with one or two major learning points.

ORDNANCE PREFLIGHT

GP BOMBS HIGH DRAG/LOW DRAG

Preflight Checks

1. Master arm switch - OFF (SAFE)
2. Emergency jettison - VISUALLY CHECK NOT PRESSED
3. Selective jettison - SAFE
4. (Parent rack) Safe/arm lever - SAFE
5. (ITERs) Safety stop lever locked
6. Swaybraces adjusted
7. (ITERs) Ejector foot positioned
8. Throttles properly set
9. Cartridges installed; breech caps tight
10. Arming wire(s) installed
11. Fuze set; safety pin/wire removed
12. (High Drag) Fin release band safety pin/wire removed
13. (Electrical fuzing) Lanyard tab attached to spring latch

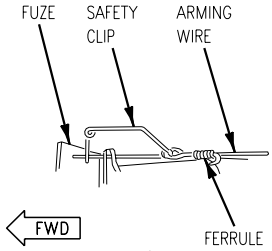
Prior To Launch (Ground Crew)

1. Rearming/arming area (before engine start)
   a. (Parent rack) Position safe/arm lever(s) to ARM
   b. (ITERs) Unlock safety stop lever(s)

After Landing or Ground Abort (Ground Crew)

1. Safing (dearming/rearming area after engine shutdown)
   a. Inspect weapon(s) for missing, loose, or damaged components
   b. Fuze(s) safe; arming wire(s) installed
   c. (Parent rack) position safe/arm lever(s) to SAFE
   d. (ITERs) Lock safety stop lever(s)

Mk 80 Series Bombs



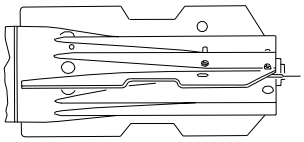
A

MAU-182

B

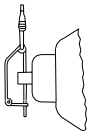
ARMING ADAPTER

C



Mk 81/82 BANDED FIN

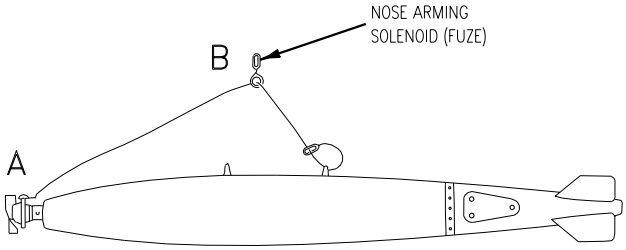
D

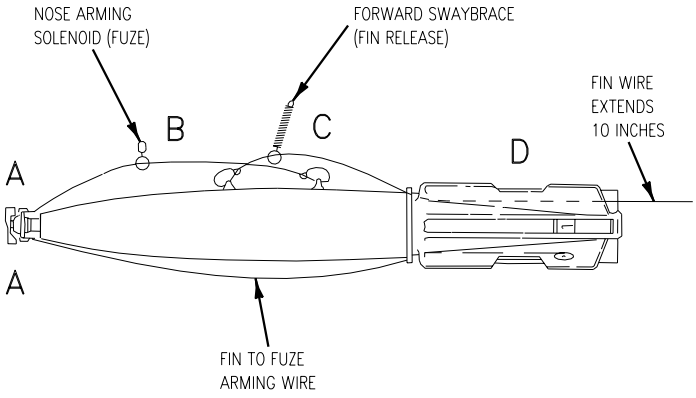


E

AV8BB-TAC-30-(61-1)08-CATI

Mk 80 Series Bombs

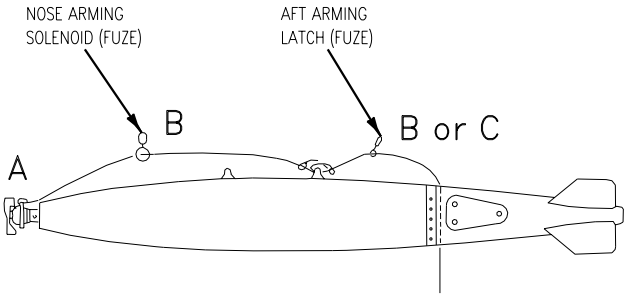


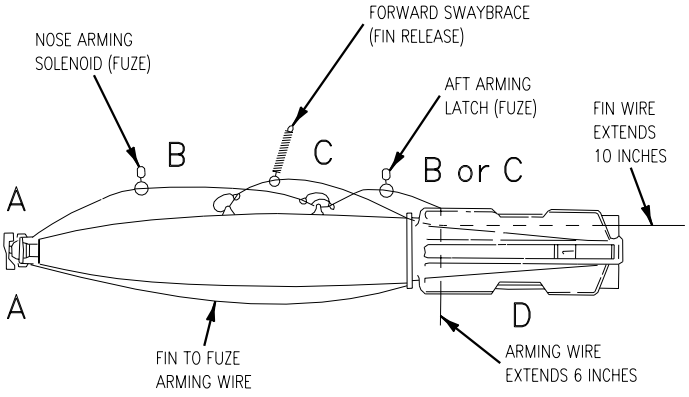


MECHANICAL NOSE FUZE
PARENT RACK/BRU-42/A (ITER)

AV8BB-TAC-30-(61-2)11-CATI

Mk 80 Series Bombs



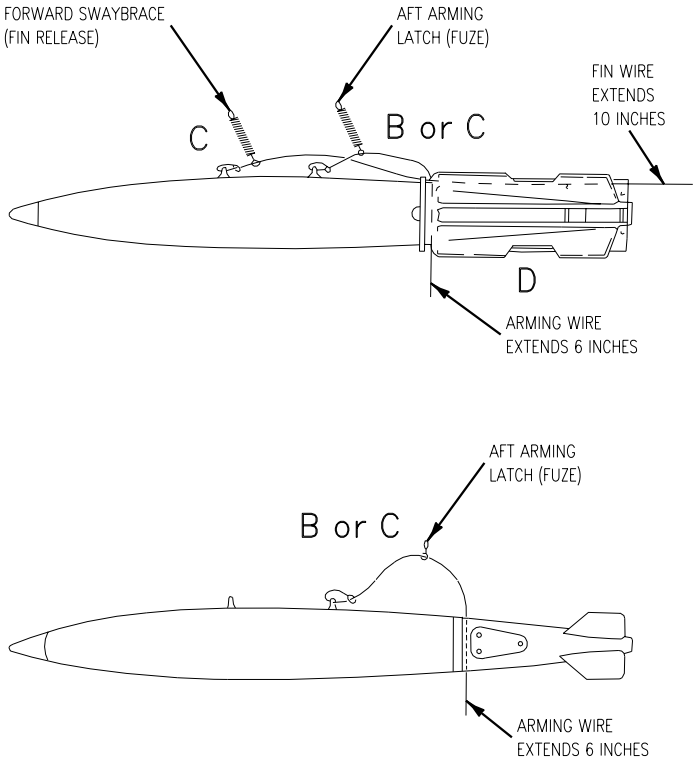


NOTE: (STA 1 & 7 W/O AFT ARMING LATCH) TAIL FUZE ARMING WIRE ARMING ADAPTER CONNECTED TO AFT SWAYBRACE.

MECHANICAL/ELECTRICAL FUZING
PARENT RACK/BRU-42/A (ITER)

AV8BB-TAC-30-(61-3)11-CATI

Mk 80 Series Bombs

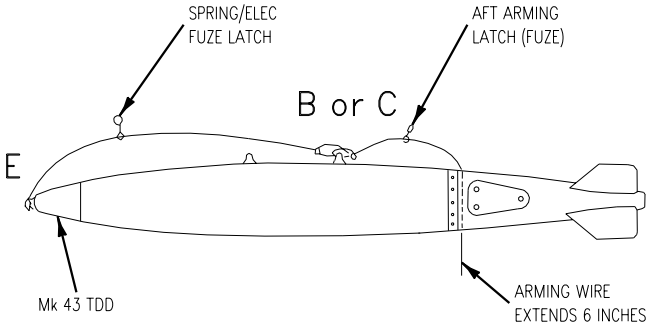


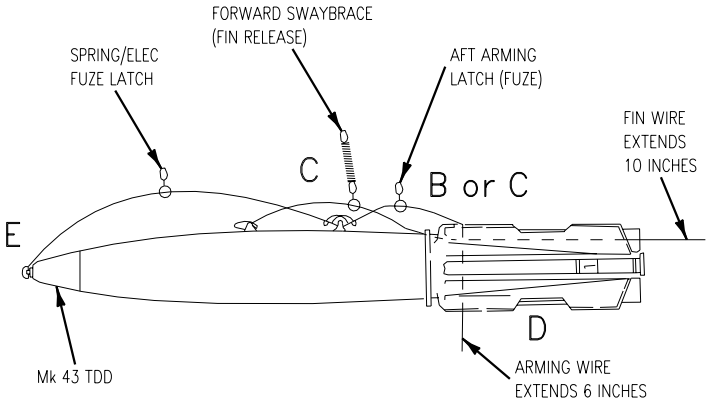
NOTE: (STA 1 & 7 W/O AFT ARMING LATCH) TAIL FUZE ARMING WIRE ARMING ADAPTER CONNECTED TO AFT SWAYBRACE.

ELECTRICAL TAIL FUZE
PARENT RACK/BRU-42/A (ITER)

AV8BB-TAC-30-(61-4)11-CATI

Mk 80 Series Bombs





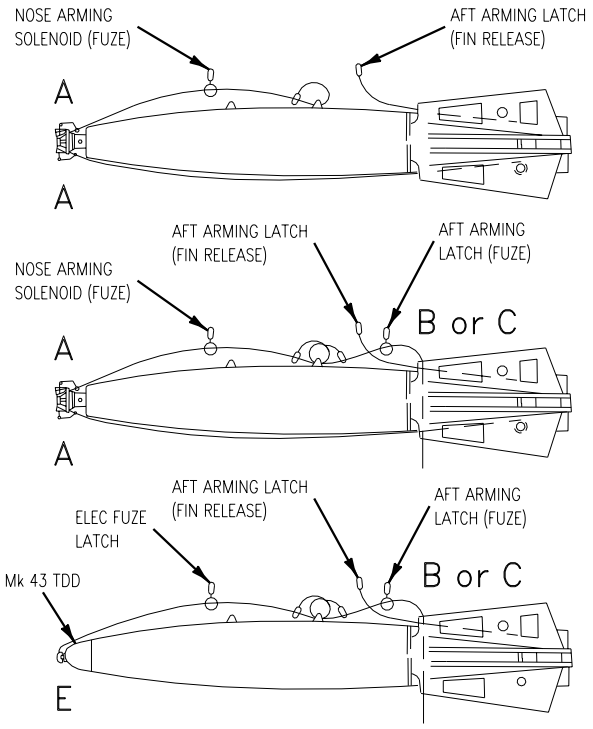
NOTE: (Mk 43 TDD ELECTRICAL INITIATION) DO NOT INSTALL ARMING WIRE. SHIPPING SAFETY CLIP REMAINS INSTALLED; WARNING TAG MUST BE REMOVED.

(STA 1 & 7 W/O AFT ARMING LATCH) TAIL FUZE ARMING WIRE ARMING ADAPTER CONNECTED TO AFT SWAYBRACE.

TDD/ELECTRICAL TAIL FUZE
PARENT RACK/BRU-42/A (ITER)

AV8BB-TAC-30-(61-5)11-CATI

Mk 80 Series Bombs



NOTE: (NONRETARD) CONNECT FIN RELEASE LANYARD TO FIN STOWAGE CLIP. REMOVE FIN TO FUZE ARMING WIRE.

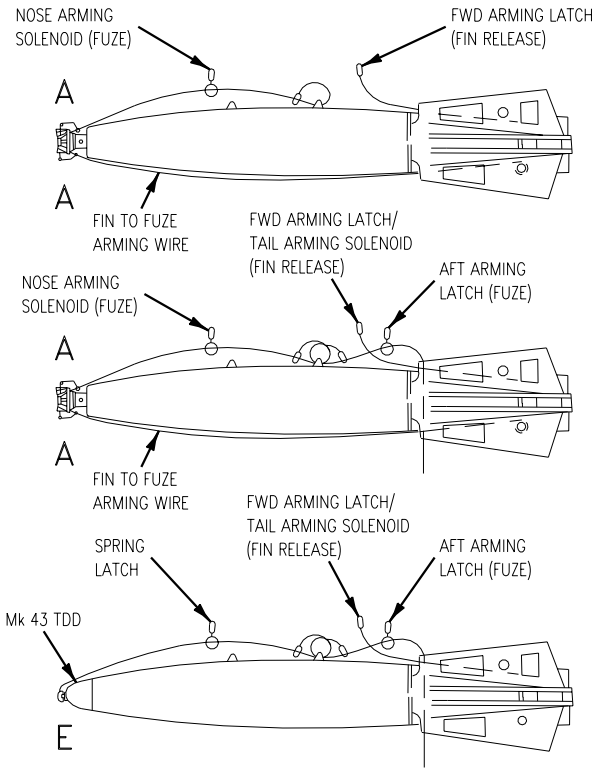
(Mk 43 TDD ELECTRICAL INITIATION) DO NOT INSTALL ARMING WIRE. SHIPPING SAFETY CLIP REMAINS INSTALLED; WARNING TAG MUST BE REMOVED.

(STA 1 & 7 W/O AFT ARMING LATCH) FIN RELEASE LANYARD ATTACHED TO TAIL ARMING SOLENOID. TAIL FUZE ARMING WIRE ARMING ADAPTER CONNECTED TO AFT SWAYBRACE.

Mk 82/BSU-86
MECHANICAL/ELECTRICAL FUZING
(PARENT RACK)

AV8BB-TAC-30-(61-6)11-CATI

Mk 80 Series Bombs



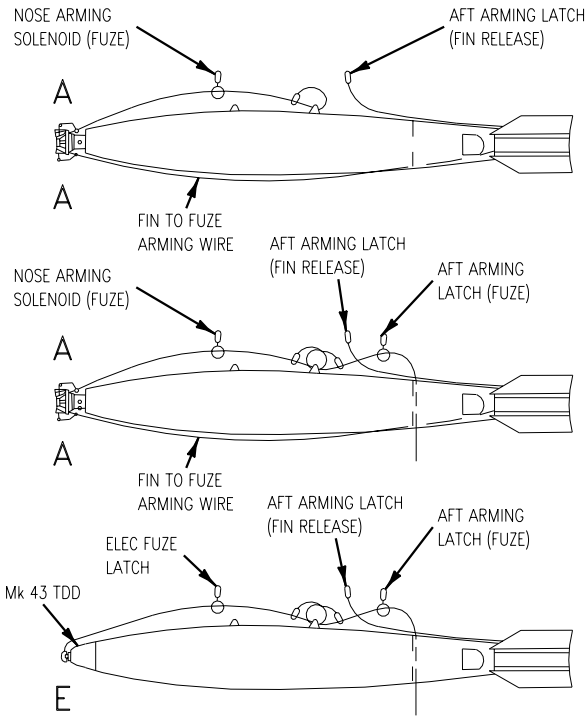
NOTE: (LOW DRAG) CONNECT FIN RELEASE LANYARD TO FIN STOWAGE CLIP. REMOVE FIN TO FUZE ARMING WIRE.

(Mk 43 TDD ELECTRICAL INITIATION) DO NOT INSTALL ARMING WIRE. SHIPPING SAFETY CLIP REMAINS INSTALLED; WARNING TAG MUST BE REMOVED.

Mk 82/BSU-86
MECHANICAL/ELECTRICAL FUZING
BRU-42 (ITER)

AV8BB-TAC-30-(61-7)11-CATI

Mk 80 Series Bombs



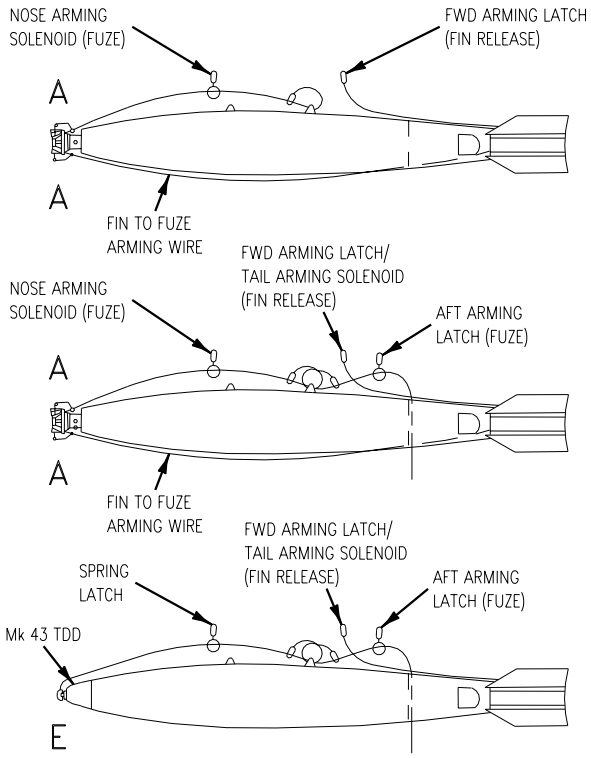
NOTE: (LOW DRAG) CONNECT FIN RELEASE LANYARD TO FIN STOWAGE CLIP. REMOVE FIN TO FUZE ARMING WIRE.

(Mk 43 TDD ELECTRICAL INITIATION) DO NOT INSTALL ARMING WIRE. SHIPPING SAFETY CLIP REMAINS INSTALLED; WARNING TAG MUST BE REMOVED.

Mk 83/BSU-85
MECHANICAL/ELECTRICAL FUZING
(PARENT RACK)

AV8BB-TAC-30-(61-8)11-CATI

Mk 80 Series Bombs



NOTE: (LOW DRAG) CONNECT FIN RELEASE LANYARD TO FIN STOWAGE CLIP. REMOVE FIN TO FUZE ARMING WIRE.

(Mk 43 TDD ELECTRICAL INITIATION) DO NOT INSTALL ARMING WIRE. SHIPPING SAFETY CLIP REMAINS INSTALLED; WARNING TAG MUST BE REMOVED.

Mk 83/BSU-85
MECHANICAL/ELECTRICAL FUZING
BRU-42 (ITER)

AV8BB-TAC-30-(61-9)11-CATI

GBU

Preflight Checks

1. Master arm switch - OFF (SAFE)
2. Emergency jettison - VISUALLY CHECK NOT PRESSED
3. Selective jettison - SAFE
4. (Parent rack) Safe/arm lever - SAFE
5. Swaybraces adjusted
6. Throttles properly set
7. Cartridges installed; breech caps tight
8. Computer control group secure to forward adapter
9. Thermal battery firing pin assembly safety wire removed; arming cable properly installed
10. Guidance fins secure and free to move
11. PRF code select switches set
12. Wing assembly secure; safety pins installed in latch release lever and wing; release lanyard properly installed
13. Fuze arming wire installed; safety pin removed
14. (Mk 122) Lanyard tab attached to spring latch
15. Detector cover and packing material installed

Prior To Launch (Ground Crew)

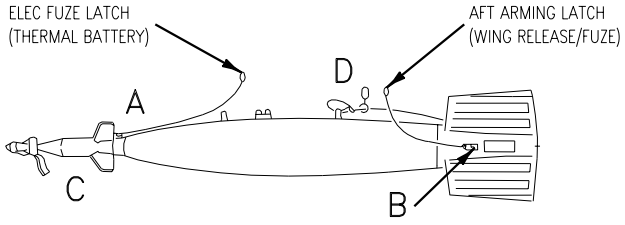
1. Rearming/arming area (before engine start)
   a. Remove detector cover(s) and packing material
   b. Remove wing assembly safety pins
   c. (Parent rack) Position safe/arm lever(s) to ARM

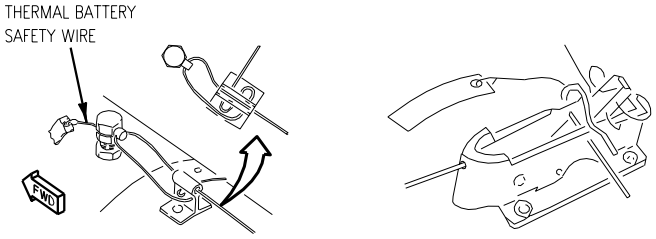
After Landing or Ground Abort (Ground Crew)

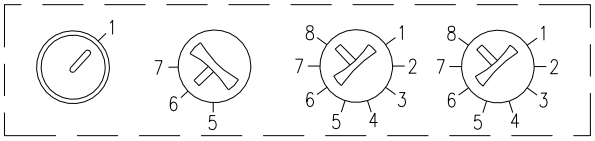
1. Safing (dearming/rearming area after engine shutdown)
   a. Inspect weapon(s) for missing, loose, or damaged components
   b. Fuze arming wire(s) installed
   c. (Parent rack) Position safe/arm lever(s) to SAFE

CONTINUED

Guided Bomb Unit







GBU-12/16(MAU-169)(PARENT RACK)

C

MAU-166

D

AV8BB-TAC-30-(62-1)08-CATI

FIRE BOMBS

Preflight Checks

1. Master arm switch - OFF (SAFE)
2. Emergency jettison - VISUALLY CHECK NOT PRESSED
3. Selective jettison - SAFE
4. (Parent rack) Safe/arm lever - SAFE
5. (ITERs) Safety stop lever locked
6. Swaybraces adjusted
7. (ITERs) Ejector foot positioned
8. Throttles properly set
9. Cartridges installed; breech caps tight
10. (Mk 13 initiator) Firing mode selector set; lanyards installed

Prior To Launch (Ground Crew)

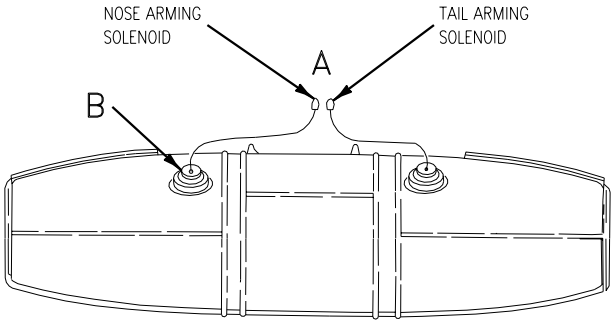
1. Rearming/arming area (before engine start)
   a. (Parent rack) Position safe/arm lever(s) to ARM
   b. (ITERs) Unlock safety stop lever(s)

After Landing or Ground Abort (Ground Crew)

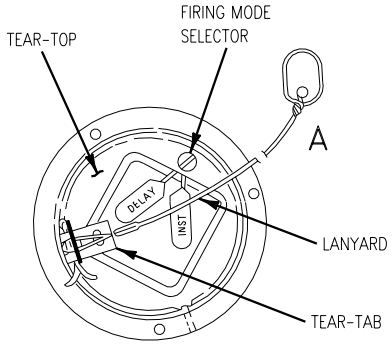
1. Safing (dearming/rearming area after engine shutdown)
   a. Inspect weapon(s) for missing, loose, or damaged components
   b. Initiators safe; lanyards installed
   c. (Parent rack) Position safe/arm lever(s) to SAFE

CONTINUED

Mk 77 Mod 4 and 5 Fire Bomb



PARENT RACK



Mk 13 INITIATOR

B

AV8BB-TAC-30-(12-1)08-CATI

CBU

Preflight Checks

1. Master arm switch - OFF (SAFE)
2. Emergency jettison - VISUALLY CHECK NOT PRESSED
3. Selective jettison - SAFE
4. (Parent rack) Safe/arm lever - SAFE
5. (ITERs) Safety stop lever locked
6. Swaybraces adjusted
7. (ITERs) Ejector foot positioned
8. Throttles properly set
9. Cartridges installed; breech caps tight
10. Fuze set; cover/safety pin(s) removed
11. Arming and fin release wire extractors installed
12. Fin:
    a. Release band retaining lanyard installed
    b. Release band safety pin removed
13. Verify option/primary wires properly rigged IAW NWP 3-22.5-AV8B, Vol. II, See CBU Loading/ Employment Matrix, Figure 2-61.
14. FMU-140:
    a. HOF correctly entered in SMC
    b. Fuze arm time entered

    Mk 339:
    a. Correct time entered on primary and option fuze dial

Prior To Launch (Ground Crew)

1. Rearming/arming area (before engine start)
    a. (Parent rack) Position safe/arm lever(s) to ARM
    b. (ITERs) Unlock safety stop lever(s)

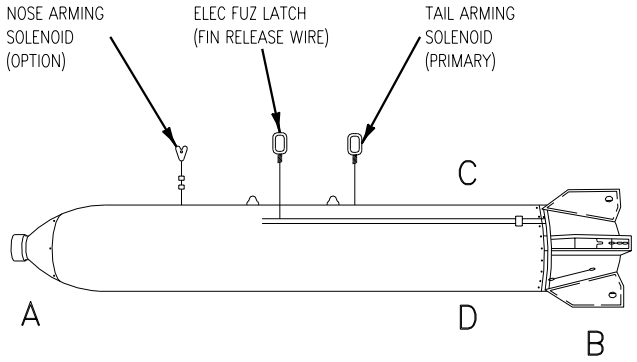
After Landing or Ground Abort (Ground Crew)

1. Safing (dearming/rearming area after engine shutdown)
    a. Inspect weapon(s) for missing, loose, or damaged components
    b. Fuze(s) safe; arming wires installed

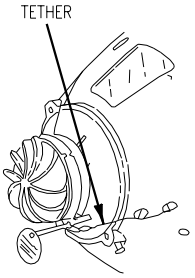
CONTINUED

c. (Parent rack) Position safe/arm lever(s) to SAFE
d. (ITERs) Lock safety stop lever(s)

Cluster Bombs



Mk 20/CBU-99/CBU-100/CBU-78



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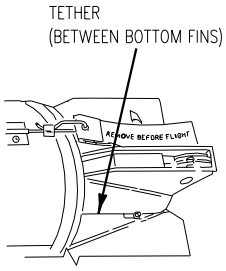

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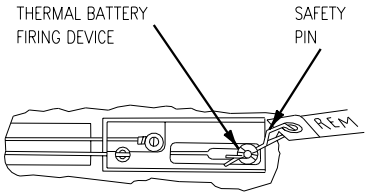

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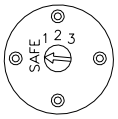


SD SELECTOR
SWITCH

D

AV8BB-TAC-30-(28-1)11-CATI

ROCKET LAUNCHERS

Preflight Checks

1. Master arm switch - OFF (SAFE)
2. Emergency jettison - VISUALLY CHECK NOT PRESSED
3. Selective jettison - SAFE
4. (Parent rack) Safe/arm lever - SAFE
5. Swaybraces adjusted
6. Throttles properly set
7. Cartridges installed; breech caps tight
8. Launcher mode selector set - RIPPLE/SINGLE
9. (LAU-10) Detent lift arms - FIRE
10. (If applicable) Fairings installed

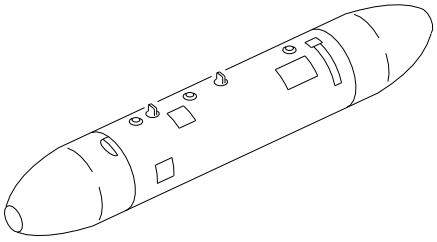
Prior To Launch (Ground Crew)

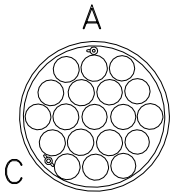
1. Rearming/arming area (after engine start)
   a. Perform stray voltage check(s)
   b. (Parent rack) Position safe/arm lever(s) to ARM
2. Arming area
   a. Electrically connect launcher(s)
   b. Remove safety switch/detent safety pin(s)

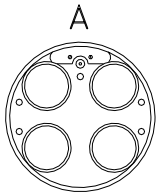
After Landing or Ground Abort (Ground Crew)

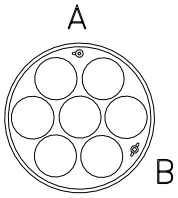
1. Safing (dearming area before engine shutdown)
   a. Install safety switch/detent safety pin(s)
   b. Electrically disconnect launcher(s)
2. Safing (dearming/rearming area after engine shutdown)
   a. (Parent rack) Position safe/arm lever(s) to SAFE

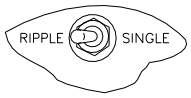
Rocket Launchers





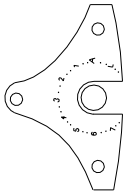






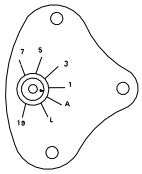
LAU-61 SERIES
MODE SELECTOR

A



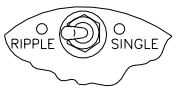
LAU-68B/A
INTERVALOMETER

B



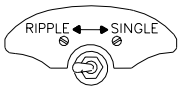
LAU-61A/A
LAU-61B/A
INTERVALOMETER

C



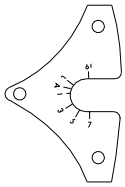
LAU-68 SERIES
MODE SELECTOR

A



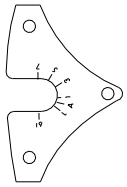
LAU-10 SERIES
MODE SELECTOR

A



LAU-68D/A
INTERVALOMETER

B



LAU-61C/A
INTERVALOMETER

C

AV8BB-TAC-30-(19-1)08-CATI

AGM-65E/F MAVERICK MISSILE

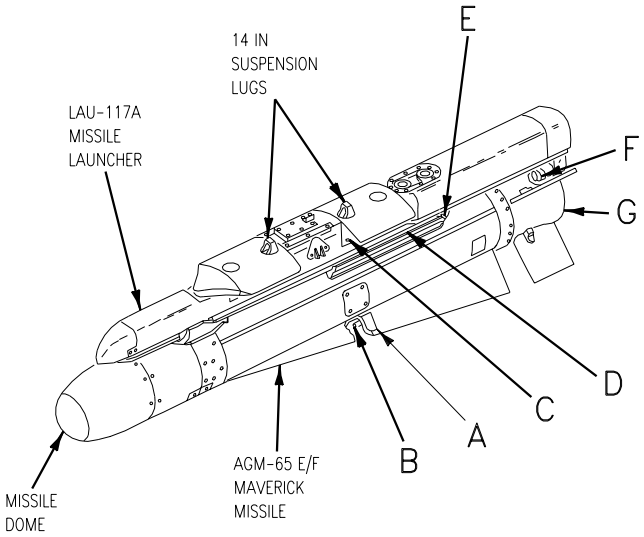
Preflight Checks

1. Weapon loadout panel - store code 54/55 - Fuzing code N/T 0
2. Master arm switch - OFF (SAFE)
3. Emergency jettison - VISUALLY CHECK NOT PRESSED
4. (Parent rack) Safe/arm lever - SAFE
5. Missile Safe Arm Device (SAD) - key installed and in safe position
6. Swaybraces adjusted
7. Cartridges installed; breech caps tight
8. Umbilical from parent rack to launcher receptacle attached
9. Verify launcher umbilical adapter is fully mated with missile umbilical connector and red band not showing
10. Verify that launcher Missile Restraint Device (MRD) engaged marks on the bell crank bearing and on the bell crank shaft are aligned
11. Verify the MRD cover is in USN position
12. Verify Missile (rocket motor) ignitor plug is NOT connected to the missile launcher. Igniter plug must be secured for captive flight

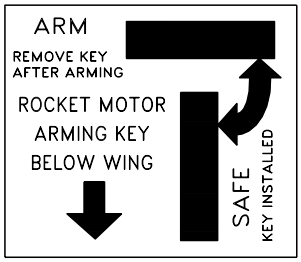
After Landing or Ground Abort (Ground Crew)

1. Safing (dearming area before engine shutdown)
   a. Install launcher safety pin(s). Install dome protector(s)
2. Safing (dearming/rearming area after engine shutdown)
   a. Inspect missile exhaust ports; clean, no soot evident
   b. (Mk 36 Mod 8/9/10/11 motor) As applicable, install SAFE/ARM mechanism T handle and rotate to SAFE

AGM-65 E/F Maverick Missile

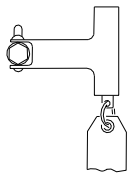


MAV



ARMING KEY DECAL

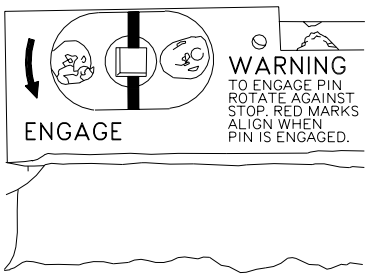
A



STANDARD ARMING KEY

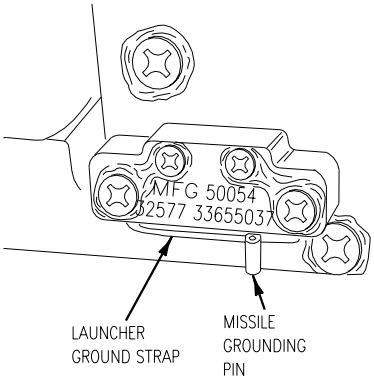
B

AV8BB-TAC-30-(89-1)10-CATI



RESTRAINT DEVICE ENGAGED

C



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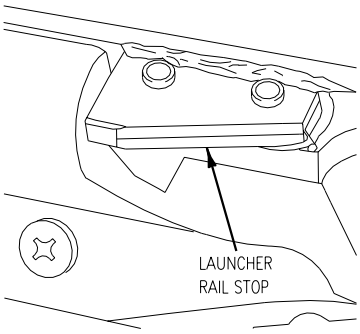
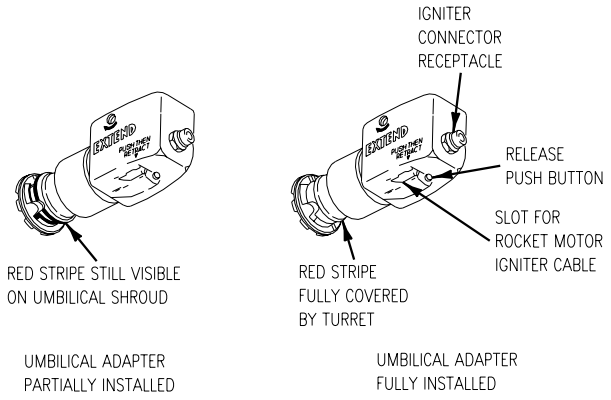


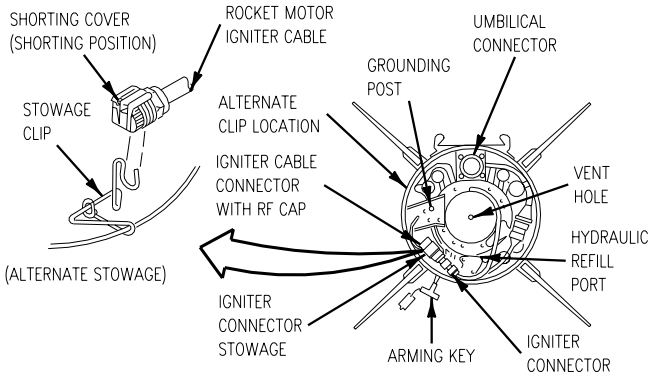
E

AV8BB-TAC-30-(89-2)11-CATI



LAUNCHER UMBILICAL ENGAGEMENT MECHANISM

F



G

AIM-9/AGM-122A/Airborne Instrumentation System (AIS) POD

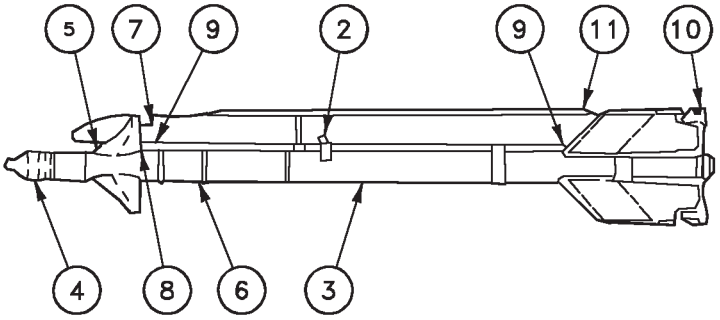
Preflight Checks

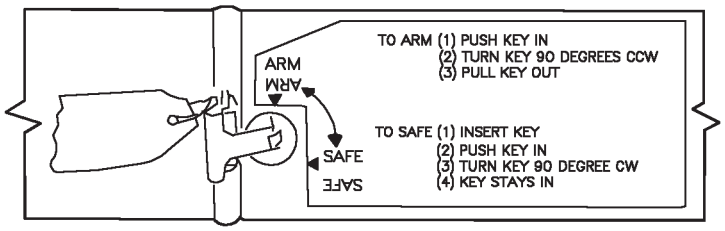
1. Parent rack with ADU-299/LAU-7:
   a. Safe/arm lever - SAFE
   b. Swaybraces adjusted
   c. Cartridges not installed; breech caps tight
2. LAU-7:
   a. Detent wrench safety pin installed
   b. Detent holddown pin installed
3. (Mk 36 Mod 8/9/10/11 motor) SAFE/ARM mechanism T handle installed; SAFE position
4. Dome protector installed
5. Umbilical connected to launcher
6. Target detector cover installed
7. (AIM-9/AGM-122A) Hooks connected to missile umbilical block
8. Fin retainers engaged
9. LAU-7 detent and snubbers securely engaging hangers
10. Rolleron covers removed
11. (LAU-7) Aft fairing secured

After Landing or Ground Abort (Ground Crew)

1. Safing (dearming area before engine shutdown)
   a. Install launcher safety pin(s)
   b. Install dome protector(s)
2. Safing (dearming/rearming area after engine shutdown)
   a. Inspect missile exhaust ports; clean, no soot evident
   b. (Mk 36 Mod 8/9/10/11 motor) As applicable, install SAFE/ARM mechanism T-handle and rotate to SAFE

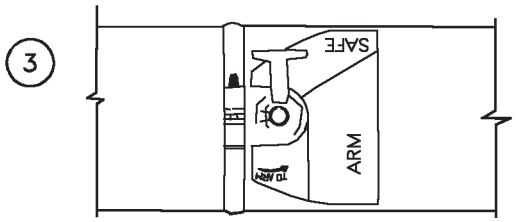
AIM-9/AGM-122A/AIS POD





MK 36 MOD 8/9 OR MK 57 MOD 2 MOTOR

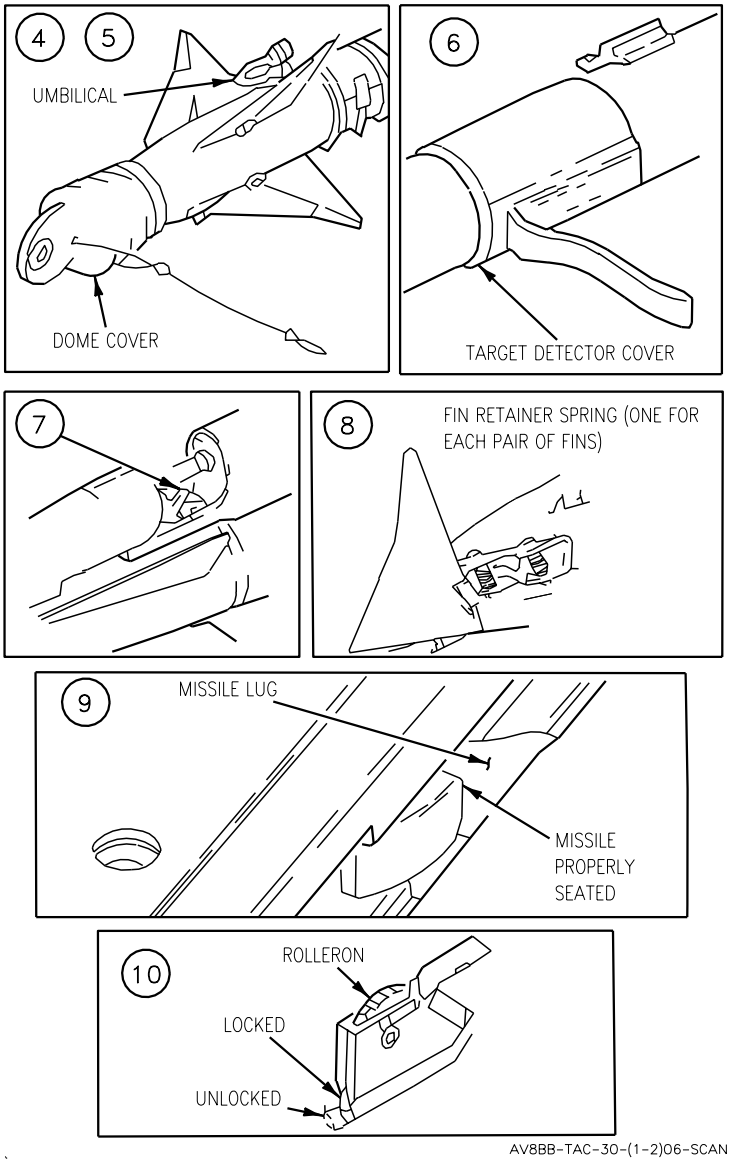
AIM-9
AGM-122
AIS POD



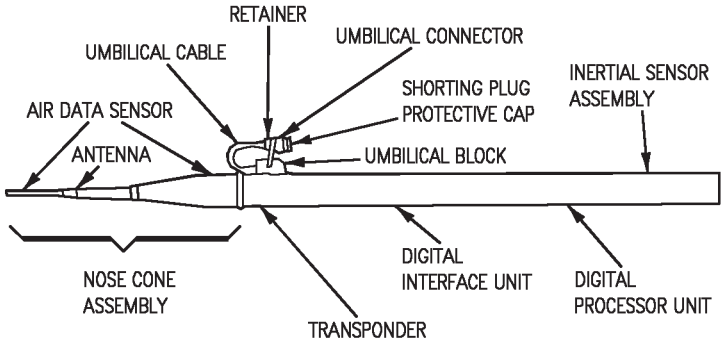
MK 36 MOD 10/11 OR MK 57 MOD 3 MOTOR

AV8BB-TAC-30-(1-1)06-SCAN

AIM-9/AGM-122A/AIS POD



AIS POD



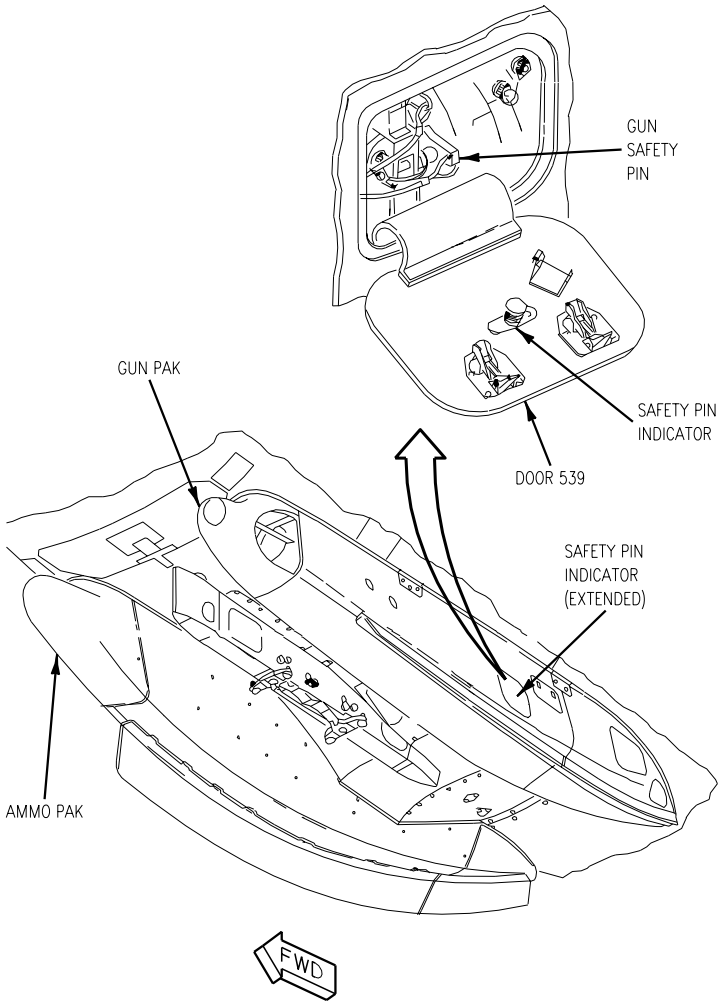
AV8BB-TAC-30-(1-3)06-SCAN

FUSELAGE MOUNTED 25 MM GUN

Preflight Checks

1. Master arm switch - OFF (SAFE)
2. Ammo loaded - TYPE, QUANTITY
3. Gun safety pin - INSTALLED (safety pin indicator EXTENDED) (refer to Fuselage Mounted Gun Exterior Inspection illustration)

Exterior Inspection



GUN

AV8BB-TAC-30-(2-1)10-CATI

SUU-25 F/A DISPENSER

WARNING

When cartridges are installed in flare dispenser, remain clear of aft end.

Preflight Checks

1. Master arm switch - OFF (SAFE)
2. Weapon loadout panel - store code 72 - Fuzing code N/T in accordance with STORES CODES
3. (Parent rack) Safe/arm lever - SAFE
4. Flare dispenser safety pin is installed
5. Verify electrical connectors are fully mated with flare dispenser electrical receptacles
6. Flare dispenser nose fairing installed
7. All access doors and panels secure

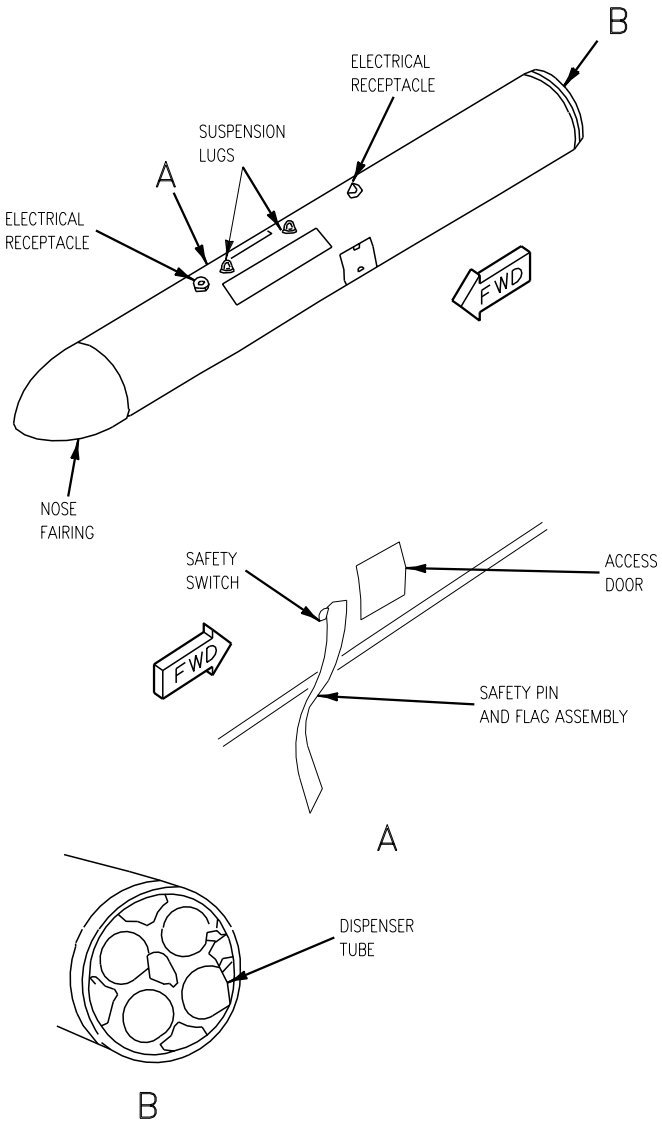
Prior to Launch (Ground Crew)

1. Rearming area (before engine start)
   a. (Parent rack) Safe/arm lever - ARM
2. Arming area (after engine start)
   a. Remove safety pin from flare dispenser

After Landing or Ground Abort (Ground Crew)

1. Safing (dearming area before engine shutdown)
   a. None
2. Safing (dearming/rearming area after engine shutdown)
   a. Install safety pin in each flare dispenser
   b. (Parent rack) Safe/arm lever - SAFE
   c. Master arm switch - OFF (SAFE)

SUU-25 F/A Dispenser



SUU-25

AV8BB-TAC-30-(93-1)10-CATI

FUZING

M904 SERIES MECHANICAL NOSE FUZE

Preflight Checks

1. (If applicable) fuze cover removed
2. Fuze safe
3. Fuze set
4. Safety wire/warning tags removed
5. Arming wire(s) installed in accordance with pocket guide/weapons/stores loading manual

Characteristics

Type	Impact - Mechanical - Nose
Limit Speeds	
Max Carriage	600 KIAS
Max Release	600 KIAS
Min Release	175 KIAS
Arming Times	2, 4, 6, 8, 10, 12, 14, 16, 18 seconds
Arming Time Tolerance	4, 6, 8, 10, 12, 14, 16, 18 seconds nominal, ±10 % 2 seconds nominal, –10 %, + 20 %
Functioning Times	0.000, 0.010, 0.025, 0.050, 0.100, 0.250 seconds
In-flight Options	None
Authorized Bombs	All Mk 80 Series GP (low/high drag configured)

Mk 339 Mod 0/1 MECHANICAL TIME FUZE

Preflight Checks

1. Fuze safe
2. Fuze primary/option time set; safety pin(s) removed.
3. Arming wire/extractor(s) installed in accordance with pocket guide, weapons/stores loading manual, and NWP 3-22.5-AV8B, Vol II, CBU Loading/Employment Matrix, Figure 2-61.

Characteristics

Type	Time - Mechanical - Nose
Limit Speeds	
Max Carriage and Release	No fuze imposed limits
Min Release	200 knots or minimum for submunitions (whichever is higher).
Preset Functioning Times	**M904 Mk 339**
Primary	1.2 seconds
Option	4.0 to 50 seconds selectable with Day and Night Attack aircraft. 4.0 seconds only on Radar aircraft.
Functioning Time Range	
Mod 0 (primary and option)	1.2 to 50.0 seconds
Mod 1 (primary and option)	1.2 to 100.0 seconds
In-flight Options	Two (primary or option)
Authorized Bombs	Mk 20, CBU-99/100, CBU-78

Mk 13 FIRE BOMB INITIATOR

Preflight Checks

1. Inspect fuze tear-top for any separation or tears.
2. Functioning delay set.
3. Arming wire(s) installed in accordance with pocket guide and weapons/stores loading manual.

Characteristics

Type ..... Impact - Mechanical - Nose (side mounted)

Limit Speeds
- Max Carriage and Release ..... No fuze imposed limits
- Min Release ..... 300 KIAS

Arming Time..... 1.0 seconds

Arming Time Tolerance..... 1.0 second nominal ±20 %

Functioning Times ..... 0.000, 0.270 second

In-Flight Options ..... None

Authorized Bombs ..... Mk 77 Mod 4/5 Fire Bomb

FMU-139/B ELECTRICAL TAIL FUZE

Preflight Checks

1. Mk 122 Arming Safety Switch lanyard tab attached to ELEC FUZ/spring latch.
2. ENSURE PROPER FUZE INSTALLED/ PRESET and identified preset data annotated on bomb fin.
3. Arming wire(s) installed in accordance with pocket guide and weapons/stores loading manual.

Characteristics

Mk 13 FMU-139

Type	Impact - Electrical - Tail
Limit Speeds	
Max Carriage and Release	No fuze imposed limits
Min Release	High drag, 400 KIAS Low drag, nose fuze imposed limits
Arming Time(s)	Low drag, 5.5 seconds High drag, 2.6 seconds Low drag, 10.0 seconds
Arming Time Tolerance	2.6 seconds nominal - 2.47 to 2.73 5.5 seconds nominal - 5.23 to 5.78 10.0 seconds nominal - 9.5 to 10.5
Functioning Times (Seconds)	0.000 (INST), 0.010, 0.025, 0.060
In-flight Options	Three: Two impact + VT
Authorized Bombs	All Mk 80 Series GP (low/high drag configured)

FMU-140/B DISPENSER PROXIMITY FUZE (DPF)

Preflight Checks

1. Fuze safe
2. Fuze ARM TIME and HOF switches set
3. Fuze primary/option time set

NOTE

If using FMU-140 in primary (HOF) mode, allow a minimum of 2.0 seconds time of fall, to activate battery, prior to reaching desired HOF.

4. Arming wire(s) installed in accordance with pocket guide, weapons/stores loading manual, and NWP 3-22.5-AV8B, Vol. II, CBU Loading/ Employment Matrix, Figure 2-61.

Characteristics

Type	Proximity Fuze - Nose
Limit Speeds	
Max Carriage and Release	No fuze imposed limits
Min Release	225 KCAS
Arming Time(s)	1.2 to 10.0 seconds
Height of Function (HOF) Range	300 to 3000 feet AGL
In-flight Options	Primary (proximity) Option (arm and fire)
Authorized Bombs	Mk 20, CBU-99/-100, CBU-78

Mk 376 ELECTRICAL TAIL FUZE

Preflight Checks

1. Mk 122 arming safety switch lanyard tab attached to spring latch.
2. Ensure proper fuze installed and identifying decal is affixed to bomb body/fin.
3. Fuze restraining clip installed.
4. Arming wire(s) installed in accordance with pocket guide and weapons/stores loading manual.

Characteristics

FMU-140
Mk 376
Mk 43

Type	Impact - Electrical - Tail
Limit Speeds	
Max Carriage and Release	No fuze imposed limits
Min Release	High drag, 400 KIAS Low drag, no fuze imposed limits
Arming Time(s)	
Mk 376	High drag, 2.6 seconds Low drag, 10.0 seconds
Arming Time Tolerance	2.6 seconds nominal - 2.3 to 3.0 10.0 seconds nominal - 8.8 to 11.0
Functioning Times (Seconds)	0.000 (INST), 0.015, 0.100
In-flight Options	Three; Four if VT element installed
Authorized Bombs	
Mk 376	All Mk 80 Series GP (low/high drag configured)

CONTINUED

Mk 43 TARGET DETECTING DEVICE (TDD)

Preflight Checks

1. Electrical Activation:
   a. Striker rod safety clip installed
   b. Instruction tag removed

2. Mechanical Activation:
   a. Arming wire/extractor(s) installed in accordance with pocket guide and weapons/ stores loading manual.
   b. Striker rod safety clip and instruction tag removed.

Characteristics

Type	Proximity Device - Nose
Limit Speeds	
Max Carriage and Release	None imposed by sensing element
Min Release	None imposed by sensing element
Ground Approach Angle	
10° to 60°	16 feet nominal
90°	4 feet nominal
In-flight Options	VT/non VT, or VT plus delay
Authorized Bombs	All Mk 80 Series GP (low/high drag configured)

PLANNING

TRIGONOMETRIC FUNCTION

ANGLE	sin	cos	tan	cot	
0	0.0000	1.0000	0.0000	XXXXXX	90
1	0.0175	0.9998	0.0175	57.2906	89
2	0.0349	0.9994	0.0349	28.6366	88
3	0.0523	0.9986	0.0524	19.0813	87
4	0.0698	0.9976	0.0699	14.3008	86
5	0.0872	0.9962	0.0875	11.4302	85
6	0.1045	0.9945	0.1051	9.5145	84
7	0.1219	0.9925	0.1228	8.1444	83
8	0.1392	0.9903	0.1405	7.1154	82
9	0.1564	0.9877	0.1584	6.3138	81
10	0.1736	0.9848	0.1763	5.6713	80
11	0.1908	0.9816	0.1944	5.1446	79
12	0.2079	0.9781	0.2126	4.7047	78
13	0.2249	0.9744	0.2309	4.3315	77
14	0.2419	0.9703	0.2493	4.0108	76
15	0.2588	0.9659	0.2679	3.7321	75
16	0.2756	0.9613	0.2867	3.4875	74
17	0.2924	0.9563	0.3057	3.2709	73
18	0.3090	0.9511	0.3249	3.0777	72
19	0.3256	0.9455	0.3443	2.9042	71
20	0.3420	0.9397	0.3640	2.7475	70
21	0.3584	0.9336	0.3839	2.6051	69
22	0.3746	0.9272	0.4040	2.4751	68
23	0.3907	0.9205	0.4245	2.3559	67
24	0.4067	0.9135	0.4452	2.2461	66
25	0.4226	0.9063	0.4663	2.1445	65
26	0.4384	0.8988	0.4877	2.0503	64
27	0.4540	0.8910	0.5095	1.9626	63
28	0.4695	0.8829	0.5317	1.8807	62
29	0.4848	0.8746	0.5543	1.8041	61
30	0.5000	0.8660	0.5773	1.7321	60
31	0.5150	0.8572	0.6009	1.6643	59
32	0.5299	0.8481	0.6249	1.6004	58
33	0.5446	0.8387	0.6494	1.5399	57
34	0.5592	0.8290	0.6745	1.4826	56
35	0.5736	0.8192	0.7002	1.4282	55
36	0.5878	0.8090	0.7265	1.3764	54
37	0.6018	0.7986	0.7535	1.3271	53
38	0.6157	0.7880	0.7813	1.2800	52
39	0.6293	0.7772	0.8098	1.2349	51
40	0.6428	0.7660	0.8391	1.1918	50
41	0.6561	0.7547	0.8693	1.1504	49
42	0.6691	0.7431	0.9004	1.1106	48
43	0.6820	0.7314	0.9325	1.0724	47
44	0.6947	0.7193	0.9657	1.0355	46
45	0.7071	0.7071	1.0000	1.0000	45
	cos	sin	cot	tan	ANGLE

TIME/SPEED/DISTANCE

(1 nm = 6076 feet)

Velocity in Knots Ground Speed						
Dimension	**360**	**420**	**450**	**480**	**510**	**540**
nm/min	6.00	7.00	7.50	8.00	8.50	9.00
ft/sec	607.6	708.9	759.5	810.1	860.8	911.4
sec/nm	10.00	8.57	8.00	7.50	7.06	6.67

Dist	Ground Speed					
(nm)	**360**	**420**	**450**	**480**	**510**	**540**
1	0:10	0:09	0:08	0:08	0:07	0:07
2	0:20	0:17	0:16	0:15	0:14	0:13
3	0:30	0:26	0:24	0:23	0:21	0:20
4	0:40	0:34	0:32	0:30	0:28	0:27
5	0:50	0:43	0:40	0:38	0:35	0:33
6	1:00	0:51	0:48	0:45	0:42	0:40
7	1:10	1:00	0:56	0:53	0:49	0:47
8	1:20	1:09	1:04	1:00	0:56	0:53
9	1:30	1:17	1:12	1:08	1:04	1:00
10	1:40	1:26	1:20	1:15	1:11	1:07
11	1:50	1:34	1:28	1:23	1:18	1:13
12	2:00	1:43	1:36	1:30	1:25	1:20
13	2:10	1:51	1:44	1:38	1:32	1:27
14	2:20	2:00	1:52	1:45	1:39	1:33
15	2:30	2:09	2:00	1:53	1:46	1:40
16	2:40	2:17	2:08	2:00	1:53	1:47
17	2:50	2:26	2:16	2:08	2:00	1:53
18	3:00	2:34	2:24	2:15	2:07	2:00
19	3:10	2:43	2:32	2:23	2:14	2:07
20	3:20	2:51	2:40	2:30	2:21	2:13
21	3:30	3:00	2:48	2:38	2:28	2:20
22	3:40	3:09	2:56	2:45	2:35	2:27
23	3:50	3:17	3:04	2:53	2:42	2:33
24	4:00	3:26	3:12	3:00	2:49	2:40
25	4:10	3:34	3:20	3:08	2:56	2:47
26	4:20	3:43	3:28	3:15	3:04	2:53
27	4:30	3:51	3:36	3:23	3:11	3:00
28	4:40	4:00	3:44	3:30	3:18	3:07
29	4:50	4:09	3:52	3:38	3:25	3:13
30	5:00	4:17	4:00	3:45	3:32	3:20

CONVERT FAC CORRECTIONS

(Cross-range correction)

SR	FAC CORRECTS 100 METERS		500 METERS	
in Ft	mR	degrees	mR	degrees
2000	164	9.4	820	46.9
3000	109	6.2	547	31.2
4000	82	4.7	410	23.4
5000	66	3.7	328	18.7
6000	55	3.1	273	15.6
7000	47	2.7	234	13.4
8000	41	2.3	205	11.7
9000	37	2.1	182	10.4
10000	33	1.9	164	9.4
11000	30	1.7	149	8.5
12000	27	1.6	138	7.8
13000	25	1.4	126	7.2
14000	23	1.3	117	6.7
15000	22	1.2	109	6.2

The correction given is for cross range mils relative to the aircraft heading. Range mil corrections are increased by a function of the sin of the harp angle. This factor can be easily derived by referencing the TACMAN error sensitivity table for the delivered weapon and dividing the range wind mil correction by the cross wind mil correction. The result is multiplied by the factor from this table to yield the range conversion.

FAC CORRECTION RULES OF THUMB

DELIVERY (ALT @ ROLL-IN)	100M CORR AT ROLL-IN CROSS (mR)	RANGE (mR)
10° BOMBS (1500 ft.)	40	10
20° ROCKETS (4500 ft.)	30	10
30° BOMBS (9000 ft.)	25	15
45° BOMBS (12000 ft.)	20	15
60° BOMBS (14000 ft.)	20	20

TARGET APPARENT SIZE IN MILLIRADIANS

size (mR) = target size (ft) × 1000 ÷ SR

SIZE	SLANT RANGE				
(feet)	2000	3000	4000	5000	6000
10	5.0	3.3	2.5	2.0	1.7
15	7.5	5.0	3.8	3.0	2.5
20	10.0	6.7	5.0	4.0	3.3
25	12.5	8.3	6.3	5.0	4.2
30	15.0	10.0	7.5	6.0	5.0
35	17.5	11.7	8.8	7.0	5.8
40	20.0	13.3	10.0	8.0	6.7
45	22.5	15.0	11.3	9.0	7.5
50	25.0	16.7	12.5	10.0	8.3
55	27.5	18.3	13.8	11.0	9.2
60	30.0	20.0	15.0	12.0	10.0
65	32.5	21.7	16.3	13.0	10.8
70	35.0	23.3	17.5	14.0	11.7

SIZE	SLANT RANGE				
(feet)	8000	10000	2 nm	3 nm	4 nm
10	1.3	1.0	0.8	0.5	0.4
15	1.9	1.5	1.2	0.8	0.6
20	2.5	2.0	1.6	1.1	0.8
25	3.1	2.5	2.0	1.4	1.0
30	3.8	3.0	2.5	1.6	1.2
35	4.4	3.5	2.9	1.9	1.4
40	5.0	4.0	3.3	2.2	1.6
45	5.6	4.5	3.7	2.5	1.8
50	6.3	5.0	4.1	2.7	2.1
55	6.9	5.5	4.5	3.0	2.3
60	7.5	6.0	4.9	3.3	2.5
65	8.1	6.5	5.3	3.6	2.7
70	8.8	7.0	5.8	3.8	2.9

RADAR HORIZON (nm) OVER FLAT TERRAIN

max detect range =

$$1.23 \times (\sqrt{\text{height of aircraft}} + \sqrt{\text{height of antenna}})$$

HEIGHT OF AIRCRAFT (ft AGL)	HEIGHT OF RADAR ANTENNA (ft)					
	0	10	20	40	60	80
	HORIZON in nm					
100	12.3	16.2	17.8	20.1	21.8	23.3
200	17.4	21.3	22.9	25.2	26.9	28.4
300	21.3	25.2	26.8	29.1	30.8	32.3
400	24.6	28.5	30.1	32.4	34.1	35.6
500	27.5	31.4	33.0	35.3	37.0	38.5
600	30.1	34.0	35.6	37.9	39.7	41.1
700	32.5	36.4	38.0	40.3	42.1	43.5
800	34.8	38.7	40.3	42.6	44.3	45.8
900	36.9	40.8	42.4	44.7	46.4	47.9
1000	38.9	42.8	44.4	46.7	48.4	49.9
2000	55.0	58.9	60.5	62.8	64.5	66.0
3000	67.4	71.3	72.9	75.1	76.9	78.4
4000	77.8	81.7	83.3	85.6	87.3	88.8
5000	87.0	90.9	92.5	94.8	96.5	98.0
6000	95.3	99.2	100.8	103.1	104.8	106.3
7000	102.9	106.8	108.4	110.7	112.4	113.9
8000	110.0	113.9	115.5	117.8	119.5	121.0
9000	116.7	120.6	122.2	124.5	126.2	127.7
10000	123.0	126.9	128.5	130.8	132.5	134.0
12000	134.7	138.6	140.2	142.5	144.3	145.7
14000	145.5	149.4	151.0	153.3	155.1	156.5
16000	155.6	159.5	161.1	163.4	165.1	166.6
18000	165.0	168.9	170.5	172.8	174.5	176.0
20000	173.9	177.8	179.4	181.7	183.5	184.9

CONTINUED

RADAR HORIZON (nm) OVER FLAT TERRAIN

max detect range =

$$1.23 \times (\sqrt{\text{height of aircraft}} + \sqrt{\text{height of antenna}})$$

HEIGHT OF AIRCRAFT (ft AGL)	HEIGHT OF RADAR ANTENNA (ft)					
	100	200	300	500	1000	2000
	HORIZON in nm					
100	24.6	29.7	33.6	39.8	51.2	67.3
200	29.7	34.8	38.7	44.9	56.3	72.4
300	33.6	38.7	42.6	48.8	60.2	76.3
400	36.9	42.0	45.9	52.1	63.5	79.6
500	39.8	44.9	48.8	55.0	66.4	82.5
600	42.4	47.5	51.4	57.6	69.0	85.1
700	44.8	49.9	53.8	60.0	71.4	87.6
800	47.1	52.2	56.1	62.3	73.7	89.8
900	49.2	54.3	58.2	64.4	75.8	91.9
1000	51.2	56.3	60.2	66.4	77.8	93.9
2000	67.3	72.4	76.3	82.5	93.9	110.0
3000	79.7	84.8	88.7	94.9	106.3	122.4
4000	90.1	95.2	99.1	105.3	116.7	132.8
5000	99.3	104.4	108.3	114.5	125.9	142.0
6000	107.6	112.7	116.6	122.8	134.2	150.3
7000	115.2	120.3	124.2	130.4	141.8	157.9
8000	122.3	127.4	131.3	137.5	148.9	165.0
9000	129.0	134.1	138.0	144.2	155.6	171.7
10000	135.3	140.4	144.3	150.5	161.9	178.0
12000	147.0	152.1	156.0	162.2	173.6	189.7
14000	157.8	162.9	166.8	173.0	184.4	200.5
16000	167.9	173.0	176.9	183.1	194.5	210.6
18000	177.3	182.4	186.3	192.5	203.9	220.0
20000	186.2	191.3	195.3	201.5	212.8	229.0

RADAR RESOLUTION CELL (AZIMUTH or ELEVATION)

Radar Resolution Cell (feet) = BW × Range × 101.27

BW in deg	Range in nm 5	10	15	20	25	30	40
0.5	253	506	760	1013	1266	1519	2025
1.0	506	1013	1519	2025	2532	3038	4051
1.5	760	1519	2279	3038	3798	4557	6076
2.0	1013	2025	3038	4051	5064	6076	8102
2.5	1266	2532	3798	5064	6329	7595	10127
3.0	1519	3038	4557	6076	7595	9114	12152
3.5	1772	3544	5317	7089	8861	10633	14178
4.0	2025	4051	6076	8102	10127	12152	16203
4.5	2279	4557	6836	9114	11393	13671	18229
5.0	2532	5064	7595	10127	12659	15191	20254

RADAR RESOLUTION CELL (RANGE)

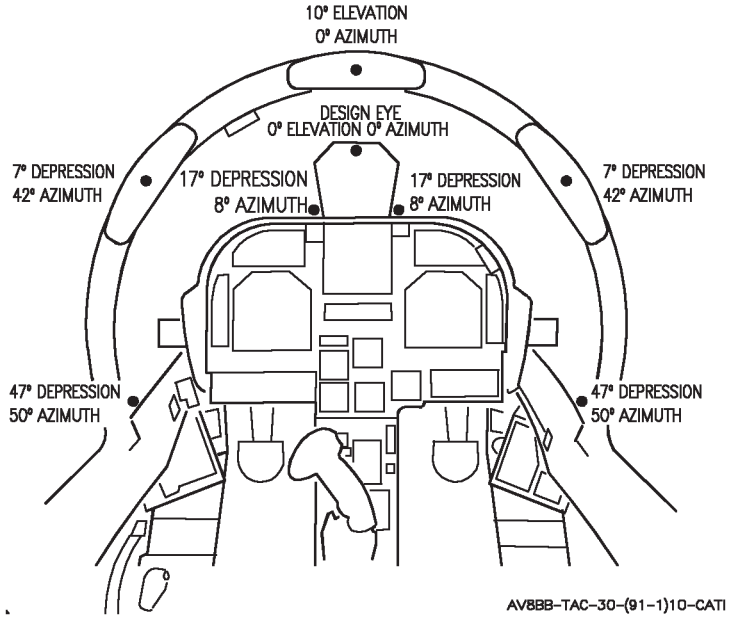
Radar Resolution Cell (feet) = (PW ÷ 2) × 984

PW ∝sec	RRC feet
0.5	246
1.0	492
1.5	738
2.0	984
2.5	1230
3.0	1476
3.5	1722
4.0	1968
4.5	2214
5.0	2460
5.5	2706
6.0	2952
6.5	3198
7.0	3444
7.5	3690
8.0	3936
8.5	4182
9.0	4428
9.5	4674
10.0	4920

Target/Bogey Position in Degrees Hi/Lo

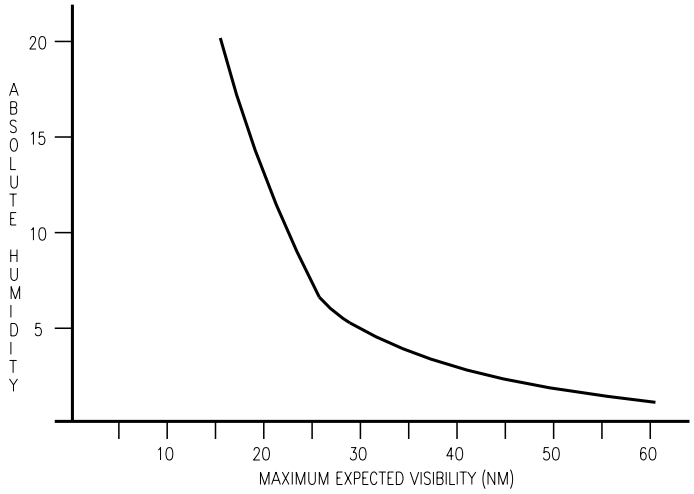
1° = 1000' @ 10nm

ALTITUDE SPLIT in feet	RANGE in nm 1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
	DEGREES HIGH OR LOW							
1K	9.3	4.7	3.1	2.4	1.9	1.6	1.4	1.2
2K	18.2	9.3	6.3	4.7	3.8	3.1	2.7	2.4
3K	26.3	13.9	9.3	7.0	5.6	4.7	4.0	3.5
4K	33.4	18.2	12.4	9.3	7.5	6.3	5.4	4.7
5K	39.5	22.4	15.3	11.6	9.3	7.8	6.7	5.9
6K	44.6	26.3	18.2	13.9	11.2	9.3	8.0	7.0
7K	49.0	29.9	21.0	16.1	13.0	10.9	9.3	8.2
8K	52.8	33.4	23.7	18.2	14.8	12.4	10.7	9.3
9K	56.0	36.5	26.3	20.3	16.5	13.9	11.9	10.5
10K	58.7	39.5	28.7	22.4	18.2	15.3	13.2	11.6



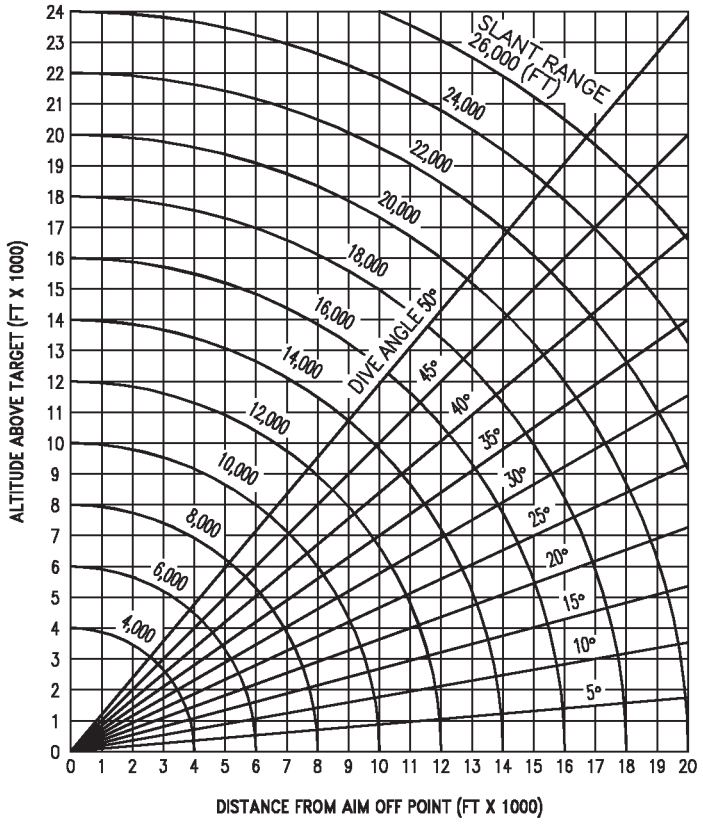
Humidity and Visibility

TEMP		RELATIVE HUMIDITY									
		10	20	30	40	50	60	70	80	90	100
F	C	ABSOLUTE HUMIDITY (g/m3)									
-13	-25	.06	.11	.17	.22	.28	.34	.39	.45	.50	.56
-4	-20	.09	.18	.27	.36	.45	.53	.62	.71	.80	.89
5	-15	.14	.28	.42	.56	.70	.84	.98	1.1	1.3	1.4
14	-10	.22	.43	.65	.86	1.1	1.3	1.5	1.7	1.9	2.1
23	-5	.32	.65	.97	1.3	1.6	1.9	2.3	2.6	2.9	3.2
32	0	.48	.97	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.8
41	5	.68	1.3	2.0	2.7	3.4	4.1	4.7	5.4	6.1	6.8
50	10	.93	1.9	2.8	3.7	4.7	5.6	6.5	7.5	8.4	9.3
59	15	1.3	2.5	3.8	5.1	6.4	7.6	8.9	10	11	13
68	20	1.7	3.4	5.2	6.9	8.6	10	12	14	16	17
77	25	2.3	4.6	6.8	9.1	11	14	16	18	21	23
86	30	3.0	6.0	9.0	12	15	18	21	24	27	30
95	35	4.0	8.0	12	16	20	24	27	31	35	39
104	40	4.8	9.6	14	19	24	29	34	38	43	48



AV8BB-TAC-30-(92-1)10-CATI

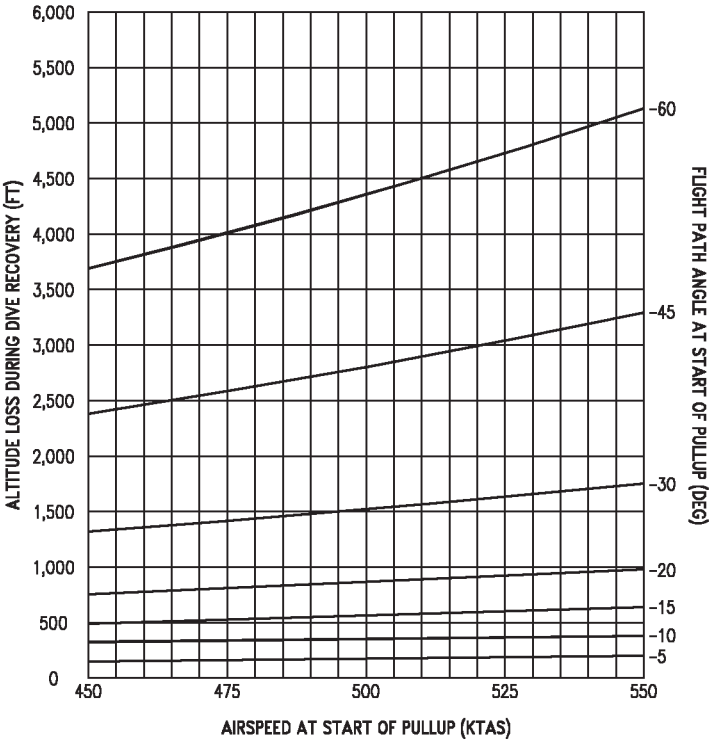
Dive Angle Versus Distance Chart



AV8BB-TAC-30-(9-1)10-CATI

Dive Recovery Chart

5.0 G SEA LEVEL TARGET ALTITUDE



24,000 Lbs. GROSS WEIGHT
WARNING: WHEN USING THIS DATA FOR TERRAIN AVOIDANCE, YOU MUST INCLUDE THE APPROPRIATE TERRAIN CLEARANCE FACTORS GIVEN BELOW.

RELEASE FPA (DEG)	TOF (FT)
-5	150
-10	200
-15	250
-20	300
-30	500
-45	700
-60	1000

AV8BB-TAC-30-(8-1)10-CATI

STANDARD LOADOUTS

WEAPONEERING ASSUMPTIONS

1. Abort altitudes assume a 5.0g recovery.

2. All Mk-82 ITER loadouts are assumed to be in-flight HI/LO selectable. All CBU ITER loadouts are assumed to be inflight selectable (primary or option).

3. All standard loadout weaponeering is computed for fastest allowable airspeed for configuration. Parent station releases are computed for 550 KTAS. ITER releases are computed for 500 KTAS releases except high angle releases which are computed at 550 KTAS.

4. The reactive weaponeering plan will optimize target Pk for least cumulative exposure.

5. The primary stores code on weaponeering sheets is for thermally protected ordnance. The secondary stores code is for ordnance without thermal protection.

6. Bomblet time-of-fall for CBU-99/100 is computed for a minimum of five seconds.

7. M904 fuzes are assumed to be set as follows:

High Drag	4 seconds
Low Drag/High Angle	8 seconds
Low Drag/Med Angle	6 seconds

CAUTION

This can be a significant limitation. If the fuzes are set up to be released high-angle (8 seconds arm time), the 10° low drag release will not allow time for the M904 or the FMU-139 to arm. In the event of marginal weather it is recommended to plan for medium angle dives (6 seconds arm time) in order to ensure adequate fuze arming should weather dictate low angle deliveries. If carrying 6 Mk-83s with M904 fuzes set to 6 seconds only four bombs can be dropped on one pass due to stick length considerations.

8. For high angle releases with 6 Mk 83s all six bombs can be released on one pass only if the bombs are single fuzed with M904s.

9. Low angle CBU computations assume 1.2 second canister opening time. Intervals are based on High Drag Impact Spacing Factors.

10. All releases incorporate 10 seconds of tracking time. Low angle releases provide seven seconds of tracking from roll-in to TPA and three seconds of tracking from TPA to release. Medium angle deliveries provide five seconds from roll-in to TPA and five seconds from TPA to release. High angle deliveries provide four seconds of tracking from roll-in to TPA and six seconds from TPA to release.

11. All minimum altitudes are computed for the highest of fuze arming time, terrain avoidance, or FRAG avoidance and is denoted as Zmin, T= terrain, FG = frag, NF = nose fuze, TF = tail fuze. The fuze is delineated because there are times when the minimum altitude is computed based on only one of the two fuzes arming.

12. The low-altitude warning will be set to the abort altitude, if possible. The pull-up cue will be set

CONTINUED

so the PUC touches the velocity vector at the abort altitude.

13. The given sight angle is for the primary release.

14. On low angle primary deliveries all ordnance is considered to be released on the first pass with the tightest possible pattern. The alternate delivery for low angle is the next tightest pattern. On medium and high angle deliveries the number of bombs for the primary delivery is optimized for a soft, unitary target as per Volume III of the Tactical Manual. The alternate medium and high angle deliveries are computed for small, soft target as per the Tactical Manual.

15. For high angle releases of parent station loads computations are made for a low altitude ingress to a high pop with the following parameters: Ingress Airspeed = 510 knots. (This is an assumption only. Faster is better). Pop to 45° nose-up and hold until 400 KTAS. At 400 KTAS bunt to 30°. Hold 30° or continue to bunt to maintain no slower then 350 KTAS until pulldown.

16. For high angle releases of ITER loads computations are made for a low altitude ingress to a 400 KTAS cruise climb.

17. Ramp downs are computed for a 15° ramp from 25,000 feet.

18. For low angle high drag deliveries BOMB is shown as colonized. Do not plan to colonize BOMB unless the terrain in the target area is known to be flat. For low angle low drag deliveries BOMB is not colonized due to inaccuracies of the RADALT at higher altitudes.

19. Target elevation is mean sea level.

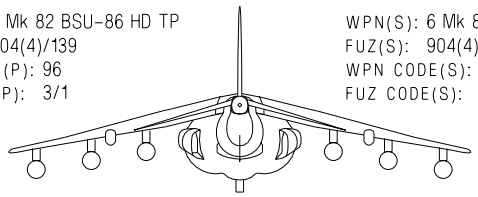
20. For mil-size relationships the target size is 30 feet.

21. CBU ITER loads reflect the maximum number of CBUs that can be carried on ITERs with in-flight selectable options. Currently the AV-8B is limited to four CBUs in this configuration.

AV-8 WEAPONEERING

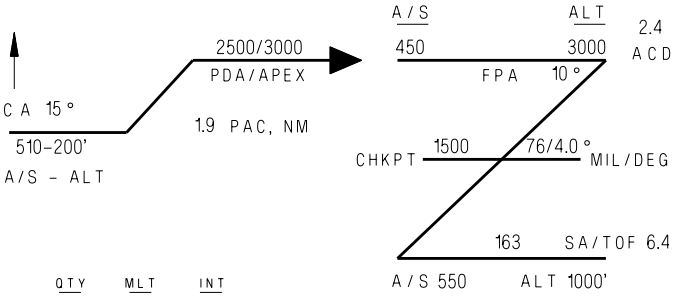
WPN(P): 6 Mk 82 BSU-86 HD TP
FUZ(P): 904(4)/139
WPN CODE(P): 96
FUZ CODE(P): 3/1

WPN(S): 6 Mk 82 BSU-86 HD
FUZ(S): 904(4)/139
WPN CODE(S): 95
FUZ CODE(S): 3/1



Mk 82 (1)	Mk 82 (2)	Mk 82 (3)	(4)	Mk 82 (5)	Mk 82 (6)	Mk 82 (7)

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	6	2	81'	110 ms
ALT	6	1	37'	50 ms

MIN RIP SGL	37'	50 ms
MIN RIP PRS	81'	110 ms
MAXIMUM	2960'	4000 ms (NF/TF)

MILS:	TGT	100m	200m
@ACD	3.5	39 mR	78 mR
@CHK	7.3	82 mR	164 mR
@REL	10.5	115 mR	230 mR

	4.0	= 780'
MIN FUZ TOF	2.6	= N/A
Zmin: 575 (T)	10 kts	= 49'
LAW: 575	100'	= 155'
PUC: 275	1 deg	= 90'
BOMB: Ⓨ / n	5 mil	= 48'

.8 deg = 15 kts = 46' = 7.5 mil

TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:81	Q:6 / M:2 / I:81	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:81	Q:6 / M:2 / I:81	SORT	SORT
HARD	Q:6 / M:2 / I:81	SORT	SORT	SORT

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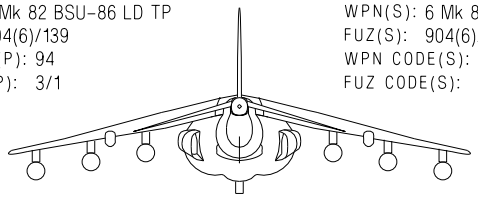
AV-8 WEAPONEERING

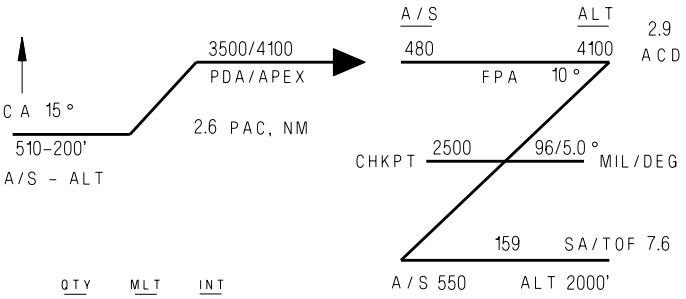
WPN(P): 6 Mk 82 BSU-86 LD TP
FUZ(P): 904(6)/139
WPN CODE(P): 94
FUZ CODE(P): 3/1

WPN(S): 6 Mk 82 BSU-86 LD
FUZ(S): 904(6)/139
WPN CODE(S): 93
FUZ CODE(S): 3/1



Mk 82 (1)	Mk 82 (2)	Mk 82 (3)	(4)	Mk 82 (5)	Mk 82 (6)	Mk 82 (7)

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	6	2	33'	60 ms
ALT	6	1	17'	30 ms

MIN RIP SGL	17'	30 ms
MIN RIP PRS	33'	60 ms
MAXIMUM	1760'	3200 ms (NF)

MILS:	TGT	100m	200m
@ACD	3.1	33 mR	66 mR
@CHK	3.8	42 mR	84 mR
@REL	4.5	51 mR	102 mR

MIN FUZ TOF 6.0 = 1724'

Zmin:	1700 (NF)	10 kts	= 109'
LAW:	1700	100'	= 98'
PUC:	1400	1 deg	= 118'
BOMB:	y / ⓝ	5 mil	= 105'

1.3 deg = 14 kts = 161' = 7.5 mil

TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:33	Q:6 / M:2 / I:33	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:33	Q:6 / M:2 / I:33	SORT	SORT
HARD	Q:6 / M:2 / I:33	SORT	SORT	SORT

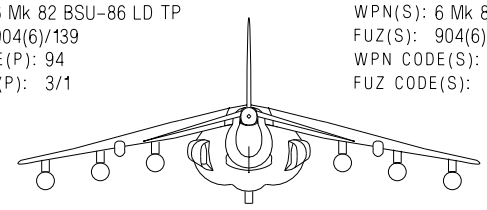
AHR609-94-2-013

Mk 82

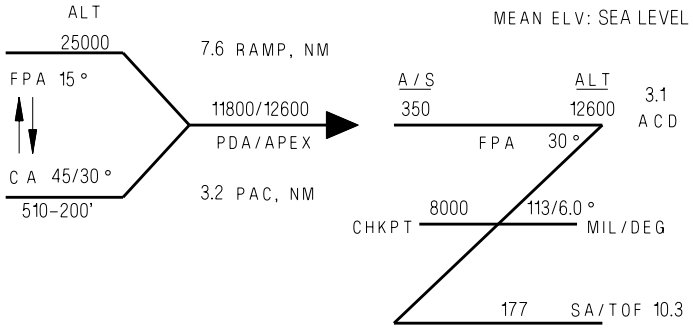
AV-8 WEAPONEERING

WPN(P): 6 Mk 82 BSU-86 LD TP
FUZ(P): 904(6)/139
WPN CODE(P): 94
FUZ CODE(P): 3/1

WPN(S): 6 Mk 82 BSU-86 LD
FUZ(S): 904(6)/139
WPN CODE(S): 93
FUZ CODE(S): 3/1



Mk 82 (1) | Mk 82 (2) | Mk 82 (3) | (4) | Mk 82 (5) | Mk 82 (6) | Mk 82 (7)



MEAN ELV: SEA LEVEL

	QTY	MLT	INT	
PRI	4	2	20'	60 ms
ALT	6	2	50'	150 ms

MIN RIP SGL	10'	30 ms
MIN RIP PRS	20'	60 ms
MAXIMUM	476'	1400 ms (TF)

MILS:	TGT	100m	200m
@ACD	1.7	20 mR	40 mR
@CHK	2.4	27 mR	57 mR
@REL	3.1	35 mR	70 mR

6.0 = 3623'
MIN FUZ TOF 5.5 = 3252'

Zmin: 3500 (TF)	10 kts =	86'
LAW: 3500	100' =	29'
PUC: 1500	1 deg =	68'
BOMB: y / (n)	5 mil =	75'

1.7 deg = 13 kts = 388' = 7.5 mil

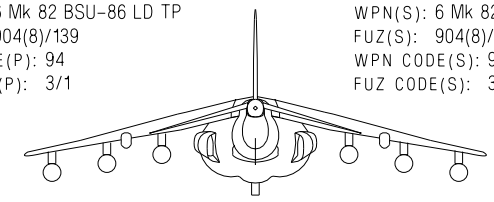
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:20	Q:6 / M:2 / I:50	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:20	Q:6 / M:2 / I:50	SORT	SORT
HARD	Q:6 / M:2 / I:20	SORT	SORT	SORT

AHR609-94-3-013

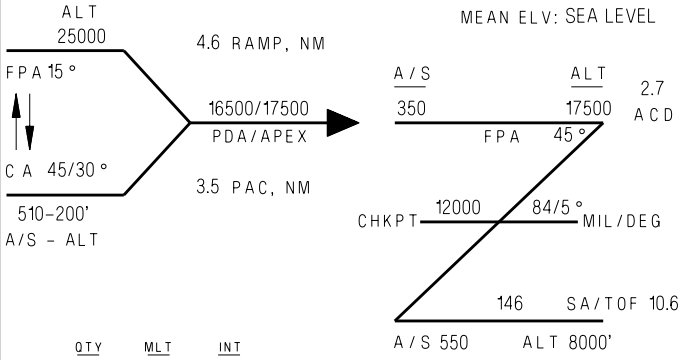
AV-8 WEAPONEERING

WPN(P): 6 Mk 82 BSU-86 LD TP
FUZ(P): 904(8)/139
WPN CODE(P): 94
FUZ CODE(P): 3/1

WPN(S): 6 Mk 82 BSU-86 LD
FUZ(S): 904(8)/139
WPN CODE(S): 93
FUZ CODE(S): 3/1



Mk 82 (1) | Mk 82 (2) | Mk 82 (3) | (4) | Mk 82 (5) | Mk 82 (6) | Mk 82 (7)



	QTY	MLT	INT	
PRI	4	2	14'	60 ms
ALT	6	2	50'	210 ms

MIN RIP SGL	7'	30 ms
MIN RIP PRS	14'	60 ms
MAXIMUM	276'	1200 ms (TF)

MILS:	TGT	100m	200m
@ACD	1.4	18 mR	36 mR
@CHK	2.5	22 mR	44 mR
@REL	3.0	33 mR	66 mR

5.5 = 4347'
MIN FUZ TOF 8.0 = 6609'

Zmin: 6600 (NF)	10 kts =	64'
LAW: 5000	100' =	15'
PUC: 2800	1 deg =	50'
BOMB: y / (n)	5 mil =	63'

1.9 deg = 15 kts = 630' = 7.5 mil

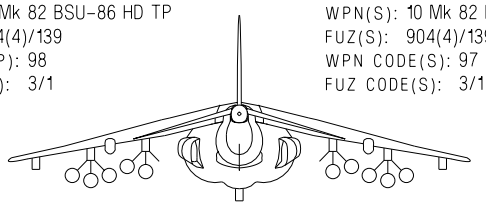
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:14	Q:6 / M:2 / I:50	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:14	Q:6 / M:2 / I:50	SORT	SORT
HARD	Q:6 / M:2 / I:14	SORT	SORT	SORT

AHR609-94-4-013

AV-8 WEAPONEERING

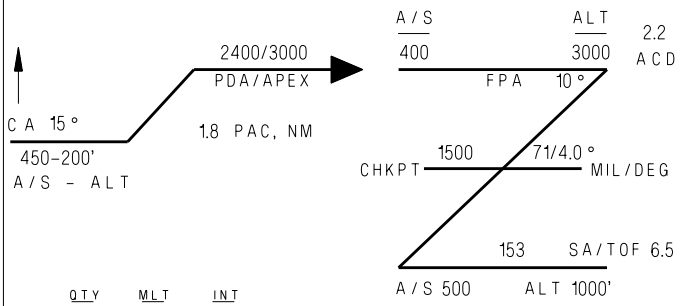
WPN(P): 10 Mk 82 BSU-86 HD TP
FUZ(P): 904(4)/139
WPN CODE(P): 98
FUZ CODE(P): 3/1

WPN(S): 10 Mk 82 BSU-86 HD
FUZ(S): 904(4)/139
WPN CODE(S): 97
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	3 Mk 82	2 Mk 82		2 Mk 82	3 Mk 82	

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	10	1	88'	130 ms
ALT	10	2	224'	330 ms

MIN RIP SGL	88'	130 ms
MIN RIP PRS	224'	330 ms
MAXIMUM	2720'	4000 ms (NF/TF)

MILS:	TGT	100m	200m
@ACD	3.5	39 mR	78 mR
@CHK	7.3	82 mR	164 mR
@REL	10.7	120 mR	240 mR

	2.6	=	N/A
MIN FUZ TOF	4.0	=	757'

Zmin: 757 (NF)	10 kts	=	48'
LAW: 750	100'	=	147'
PUC: 450	1 deg	=	82'
BOMB: Ⓨ / n	5 mil	=	45'

.8 deg = 14 kts = 45' = 7.5 mil

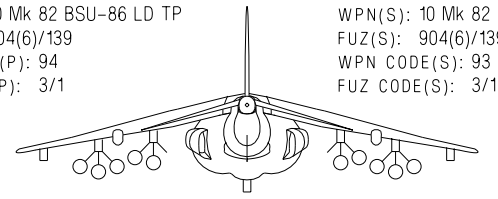
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:224	Q:6 / M:2 / I:224	Q:8 / M:1 / I:88	SORT
MED	Q:6 / M:2 / I:224	Q:8 / M:2 / I:224	SORT	SORT
HARD	Q:6 / M:2 / I:224	SORT	SORT	SORT

AHR609-94-5-013

AV-8 WEAPONEERING

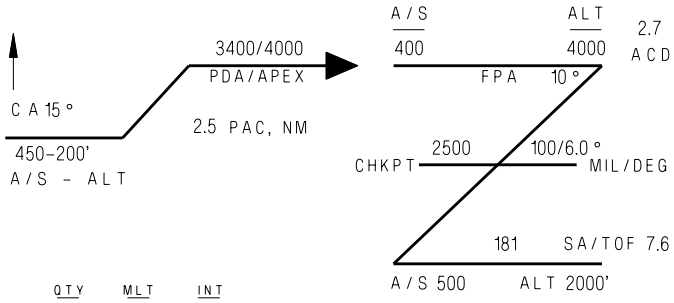
WPN(P): 10 Mk 82 BSU-86 LD TP
FUZ(P): 904(6)/139
WPN CODE(P): 94
FUZ CODE(P): 3/1

WPN(S): 10 Mk 82 BSU-86 LD
FUZ(S): 904(6)/139
WPN CODE(S): 93
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	3 Mk 82	2 Mk 82		2 Mk 82	3 Mk 82	

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	10	2	48'	90 ms
ALT	10	1	27'	50 ms

MIN RIP SGL	27'	50 ms
MIN RIP PRS	48'	90 ms
MAXIMUM	1272'	2400 ms (NF)

MILS:	TGT	100m	200m
@ACD	3.2	32 mR	64 mR
@CHK	4.1	45 mR	90 mR
@REL	5.0	55 mR	110 mR

MIN FUZ TOF 6.0 = 1639'

Zmin:	1639 (NF)	10 kts =	100'
LAW:	1650	100' =	97'
PUC:	1350	1 deg =	112'
BOMB:	y / ⓝ	5 mil =	94'

1.2 deg = 14 kts = 145' = 7.5 mil

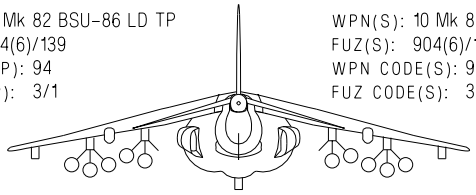
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:48	Q:6 / M:1 / I:27	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:48	Q:6 / M:1 / I:27	SORT	SORT
HARD	Q:6 / M:2 / I:48	SORT	SORT	SORT

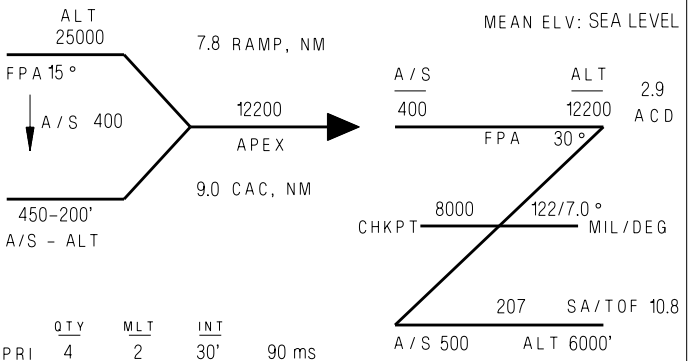
AHR609-94-6-013

AV-8 WEAPONEERING

WPN(P): 10 Mk 82 BSU-86 LD TP
FUZ(P): 904(6)/139
WPN CODE(P): 94
FUZ CODE(P): 3/1

WPN(S): 10 Mk 82 BSU-86 LD
FUZ(S): 904(6)/139
WPN CODE(S): 93
FUZ CODE(S): 3/1





	QTY	MLT	INT	
PRI	4	2	30'	90 ms
ALT	6	2	50'	150 ms

MIN RIP SGL	16.5'	50 ms
MIN RIP PRS	30'	90 ms
MAXIMUM	396'	1200 ms (TF)
	528'	1600 ms (NF)

MILS:	TGT	100m	200m
@ACD	1.8	21 mR	42 mR
@CHK	2.5	28 mR	54 mR
@REL	3.2	35 mR	70 mR

6.0 = 3378'
MIN FUZ TOF 5.5 = 3099'

Zmin: 3378 (NF)	10 kts =	87'
LAW: 3380	100' =	30'
PUC: 1700	1 deg =	70'
BOMB: y / ⓝ	5 mil =	71'

1.5 deg = 12 kts = 355' = 7.5 mil

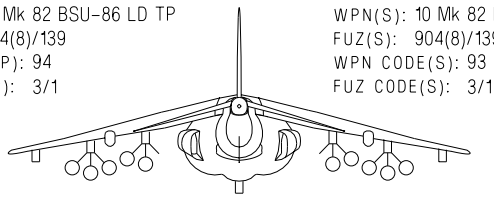
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:30	Q:6 / M:2 / I:50	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:30	Q:6 / M:2 / I:50	SORT	SORT
HARD	Q:6 / M:2 / I:30	SORT	SORT	SORT

AHR609-94-7-013

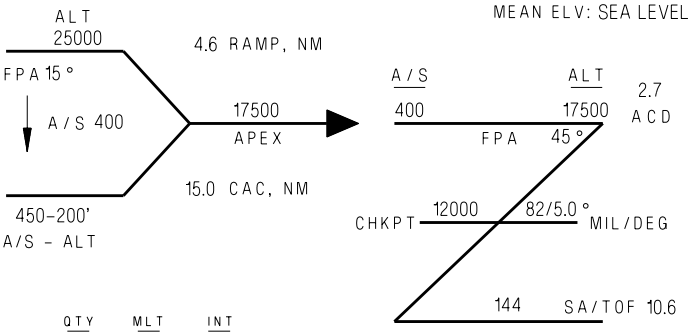
AV-8 WEAPONEERING

WPN(P): 10 Mk 82 BSU-86 LD TP
FUZ(P): 904(8)/139
WPN CODE(P): 94
FUZ CODE(P): 3/1

WPN(S): 10 Mk 82 BSU-86 LD
FUZ(S): 904(8)/139
WPN CODE(S): 93
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	3 Mk 82	2 Mk 82		2 Mk 82	3 Mk 82	



	QTY	MLT	INT	
PRI	4	2	76'	330 ms
ALT	6	1	30'	130 ms

MIN RIP SGL	30'	50 ms
MIN RIP PRS	76'	90 ms
MAXIMUM	276'	1200 ms (TF)
	829'	4000 ms (NF)

MILS:	TGT	100m	200m
@ACD	1.5	19 mR	38 mR
@CHK	2.5	22 mR	44 mR
@REL	3.0	33 mR	66 mR

	5.5	=	4347'
MIN FUZ TOF	8.0	=	6607'

Zmin: 6600 (NF)	10 kts	=	64'
LAW: 5000	100'	=	15'
PUC: 2800	1 deg	=	50'
BOMB: y / ⓝ	5 mil	=	63'

1.8 deg = 15 kts = 630' = 7.5 mil

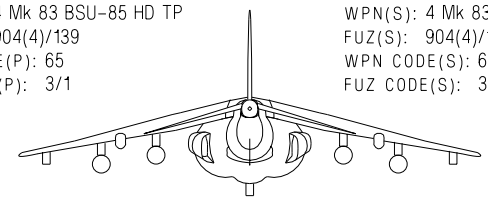
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:76	Q:6 / M:1 / I:30	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:76	Q:6 / M:1 / I:30	SORT	SORT
HARD	Q:6 / M:2 / I:76	SORT	SORT	SORT

AHR609-94-8-013

AV-8 WEAPONEERING

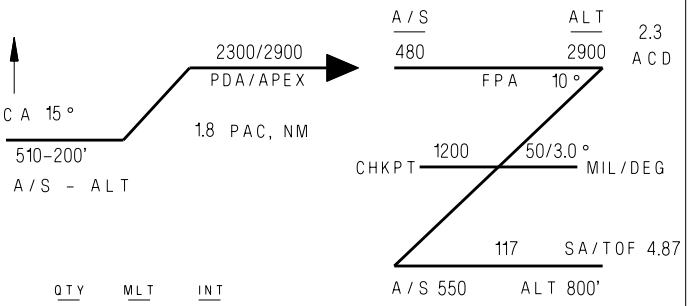
WPN(P): 4 Mk 83 BSU-85 HD TP
FUZ(P): 904(4)/139
WPN CODE(P): 65
FUZ CODE(P): 3/1

WPN(S): 4 Mk 83 BSU-85 HD
FUZ(S): 904(4)/139
WPN CODE(S): 64
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mk 83	Mk 83		Mk 83	Mk 83	

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	4	1	103'	140 ms
ALT	4	2	260'	350 ms

MIN RIP SGL	103'	140 ms
MIN RIP PRS	259'	350 ms
MAXIMUM	2960'	4000 ms (NF/TF)

MILS:	TGT	100m	200m
@ACD	3.5	40 mR	80 mR
@CHK	8.1	88 mR	176 mR
@REL	10.3	109 mR	218 mR

	2.6	= N/A
MIN FUZ TOF	4.0	= 789'

Zmin: 575 (T)	10 kts =	43'
LAW: 575	100' =	135'
PUC: 275	1 deg =	63'
BOMB: (y) / n	5 mil =	44'

1 deg = 15 kts = 49' = 7.5 mil

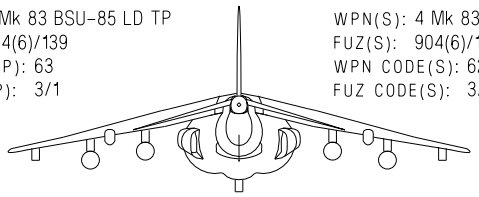
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:1 / I:103	Q:4 / M:1 / I:103	Q:4 / M:1 / I:103	SORT
MED	Q:4 / M:1 / I:103	Q:4 / M:1 / I:103	SORT	SORT
HARD	Q:4 / M:1 / I:103	SORT	SORT	SORT

AHR609-94-9-013

AV-8 WEAPONEERING

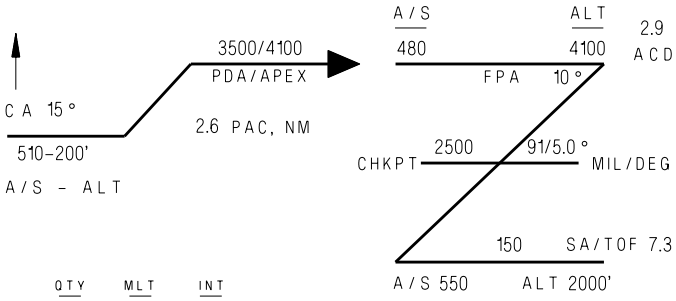
WPN(P): 4 Mk 83 BSU-85 LD TP
FUZ(P): 904(6)/139
WPN CODE(P): 63
FUZ CODE(P): 3/1

WPN(S): 4 Mk 83 BSU-85 LD
FUZ(S): 904(6)/139
WPN CODE(S): 62
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mk 83	Mk 83		Mk 83	Mk 83	

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	4	2	66'	120 ms
ALT	4	1	33'	60 ms

MIN RIP SGL	33'	60 ms
MIN RIP PRS	66'	120 ms
MAXIMUM	770'	1400 ms (NF)

MILS:	TGT	100m	200m
@ACD	3.1	32 mR	64 mR
@CHK	3.8	42 mR	84 mR
@REL	4.6	52 mR	104 mR

MIN FUZ TOF 6.0 = 1740'

Zmin:	1740 (NF)	10 kts =	112'
LAW:	1740	100' =	96'
PUC:	1440	1 deg =	121'
BOMB:	Ⓨ / n	5 mil =	110'

1.4 deg = 15 kts = 170' = 7.5 mil

TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:66	Q:4 / M:2 / I:75	Q:4 / M:1 / I:85	SORT
MED	Q:4 / M:2 / I:66	Q:4 / M:2 / I:75	SORT	SORT
HARD	Q:4 / M:2 / I:66	SORT	SORT	SORT

AHR609-94-10-013

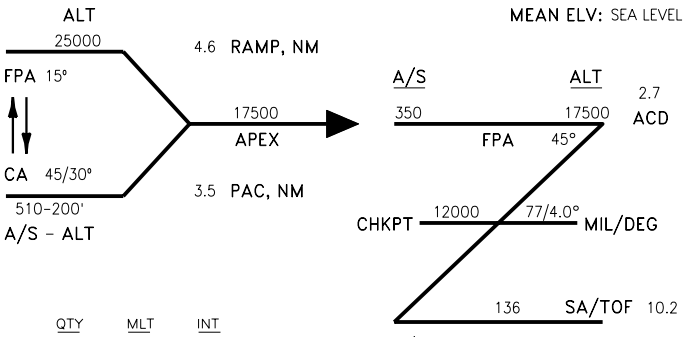
Mk 83

AV-8 WEAPONEERING

WPN(P): 4 Mk 83 BSU-85 LD TP
FUZ(P): 904(8)/139
WPN CODE(P): 63
FUZ CODE(P): 3/1

WPN(S): 4 Mk 83 BSU-85 LD
FUZ(S): 904(8)/139
WPN CODE(S): 62
FUZ CODE(S): 3/1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mk 83	Mk 83		Mk 83	Mk 83	



	QTY	MLT	INT	
PRI	4	2	28'	120 ms
ALT	4	2	75'	322 ms

MIN RIP SGL	14'	60 ms
MIN RIP PRS	28'	120 ms
MAXIMUM	140'	600 ms (TF)
	744'	3200 ms (NF)

MILS:	TGT	100m	200m
@ACD	1.5	18 mR	36 mR
@CHK	2.0	22 mR	44 mR
@REL	2.9	32 mR	64 mR

	5.5	=	4424'
MIN FUZ TOF	8.0	=	6790'

Zmin:	6790 (NF)	10 kts	= 63'
LAW:	5000	100'	= 14'
PUC:	3000	1 deg	= 47'
BOMB:	y / ⓝ	5 mil	= 64'

2 deg = 15 kts = 686' = 7.5 mil

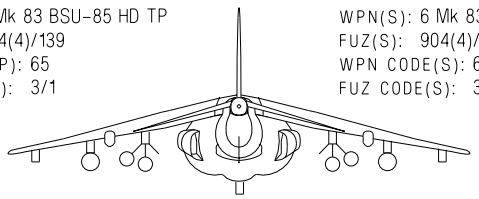
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:28	Q:4 / M:2 / I:75	Q:4 / M:1 / I:46	SORT
MED	Q:4 / M:2 / I:28	Q:4 / M:2 / I:75	SORT	SORT
HARD	Q:4 / M:2 / I:28	SORT	SORT	SORT

AV8BB-TAC-30-(94-11)11-CATI

AV-8 WEAPONEERING

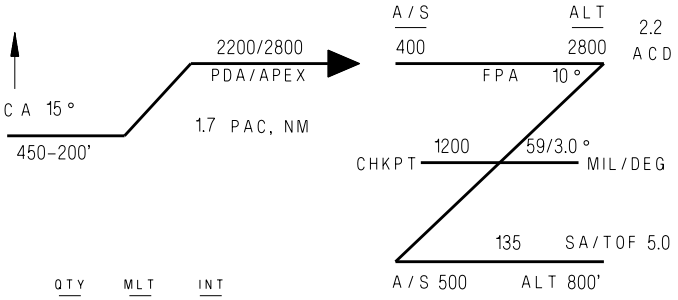
WPN(P): 6 Mk 83 BSU-85 HD TP
FUZ(P): 904(4)/139
WPN CODE(P): 65
FUZ CODE(P): 3/1

WPN(S): 6 Mk 83 BSU-85 HD
FUZ(S): 904(4)/139
WPN CODE(S): 64
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mk 83	2 Mk 83		2 Mk 83	Mk 83	

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	6	1	55'	80 ms
ALT	6	2	110'	160 ms

MIN RIP SGL	55'	80 ms
MIN RIP PRS	110'	160 ms
MAXIMUM	2720'	4000 ms (NF/TF)

MILS:	TGT	100m	200m
@ACD	3.4	40 mR	80 mR
@CHK	8.5	97 mR	194 mR
@REL	10.7	119 mR	238 mR

	2.6	=	N/A
MIN FUZ TOF	4.0	=	762'
Zmin: 531 (T)	10 kts	=	37'
LAW: 531	100'	=	140'
PUC: 231	1 deg	=	72'
BOMB: (y) / n	5 mil	=	48'

1.1 deg = 20 kts = 50' = 7.5 mil

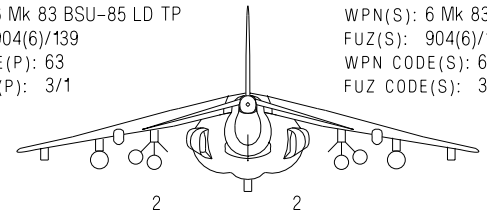
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:110	Q:6 / M:1 / I:55	Q:6 / M:1 / I:55	SORT
MED	Q:6 / M:2 / I:110	Q:6 / M:1 / I:55	SORT	SORT
HARD	Q:6 / M:2 / I:110	SORT	SORT	SORT

AHR609-94-12-013

AV-8 WEAPONEERING

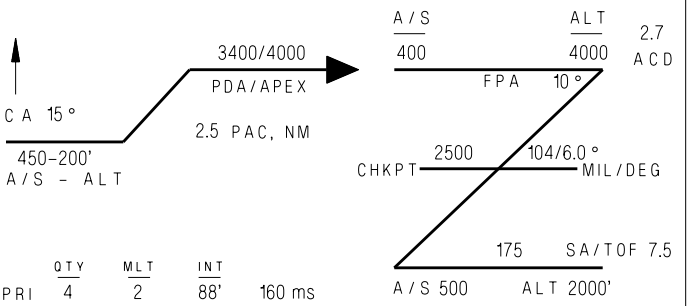
WPN(P): 6 Mk 83 BSU-85 LD TP
FUZ(P): 904(6)/139
WPN CODE(P): 63
FUZ CODE(P): 3/1

WPN(S): 6 Mk 83 BSU-85 LD
FUZ(S): 904(6)/139
WPN CODE(S): 62
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mk 83	2 Mk 83		2 Mk 83	Mk 83	

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	4	2	88'	160 ms
ALT	6	2	88'	160 ms

MIN RIP SGL	44'	80 ms
MIN RIP PRS	88'	160 ms
MAXIMUM	660'	1200 ms (NF)
	2200'	4000 ms (TF)

MILS:	TGT	100m	200m
@ACD	3.1	32 mR	64 mR
@CHK	4.0	44 mR	88 mR
@REL	4.8	52 mR	104 mR

MIN FUZ TOF 6.0 = 1655'

Zmin:	1655 (NF)	10 kts =	103'
LAW:	1650	100' =	96'
PUC:	1350	1 deg =	117'
BOMB:	y / ⓝ	5 mil =	99'

1.3 deg = 14 kts = 155' = 7.5 mil

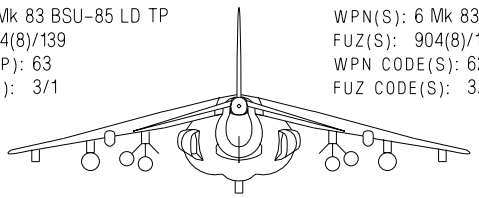
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:88	Q:6 / M:2 / I:88	Q:6 / M:1 / I:50	SORT
MED	Q:6 / M:2 / I:88	Q:6 / M:2 / I:88	SORT	SORT
HARD	Q:6 / M:2 / I:88	SORT	SORT	SORT

AHR609-94-13-013

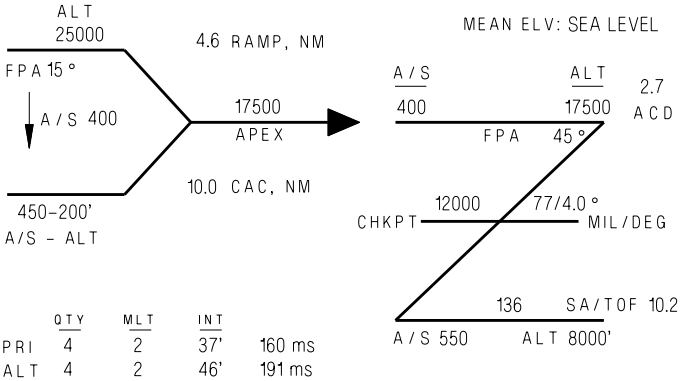
AV-8 WEAPONEERING

WPN(P): 6 Mk 83 BSU-85 LD TP
FUZ(P): 904(8)/139
WPN CODE(P): 63
FUZ CODE(P): 3/1

WPN(S): 6 Mk 83 BSU-85 LD
FUZ(S): 904(8)/139
WPN CODE(S): 62
FUZ CODE(S): 3/1



(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mk 83	2 Mk 83		2 Mk 83	Mk 83	



	QTY	MLT	INT	
PRI	4	2	37'	160 ms
ALT	4	2	46'	191 ms

MIN RIP SGL	18'	80 ms
MIN RIP PRS	37'	160 ms
MAXIMUM	138'	600 ms (TF)
	720'	3200 ms (NF)

MILS:	TGT	100m	200m
@ACD	1.5	18 mR	36 mR
@CHK	2.0	22 mR	44 mR
@REL	3.0	33 mR	66 mR

	5.5	=	4424'
MIN FUZ TOF	8.0	=	6790'

Zmin: 6790 (NF)	10 kts	=	63'
LAW: 5000	100'	=	14'
PUC: 3000	1 deg	=	47'
BOMB: y / ⓝ	5 mil	=	64'

2.0 deg = 15 kts = 686' = 7.5 mil

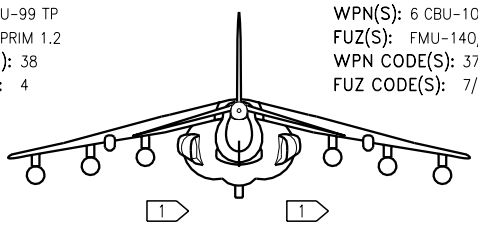
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:4 / M:2 / I:37	Q:4 / M:2 / I:46	Q:4 / M:2 / I:46	SORT
MED	Q:4 / M:2 / I:37	Q:4 / M:2 / I:46	SORT	SORT
HARD	Q:4 / M:2 / I:37	SORT	SORT	SORT

AHR609-94-14-013

AV-8 WEAPONEERING

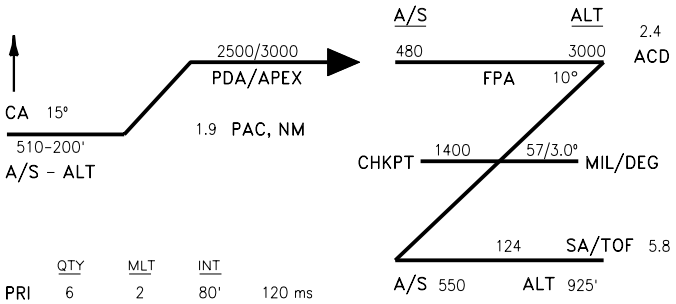
WPN(P): 6 CBU-99 TP
FUZ(P): 339/PRIM 1.2
WPN CODE(P): 38
FUZ CODE(P): 4

WPN(S): 6 CBU-100
FUZ(S): FMU-140/HOF 700'
WPN CODE(S): 37
FUZ CODE(S): 7/3



CBU-99 (1)	CBU-99 (2)	CBU-99 (3)	(4)	CBU-99 (5)	CBU-99 (6)	CBU-99 (7)
		1		1		

MEAN ELV: SEA LEVEL



	QTY	MLT	INT	
PRI	6	2	80'	120 ms
ALT	6	1	40'	60 ms

MIN RIP SGL	40'	60 ms
MIN RIP PRS	80'	120 ms
MAXIMUM	2680'	4000 ms

MILS:	TGT	100m	200m
@ACD	3.5	39 mR	78 mR
@CHK	7.3	82 mR	164 mR
@REL	9.1	99 mR	198 mR

MIN FUZ TOF 1.2 = 700'

Zmin:	700 (NF)	10 kts =	45'
LAW:	700	100' =	13'
PUC:	400	1 deg =	59'
BOMB:	Ⓨ / n	5 mil =	55'

1.4 deg = 18 kts = 635' = 7.5 mil

TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:2 / M:2 / I:N/A	Q:4 / M:2 / I:120	Q:4 / M:1 / I:100	SORT
MED	Q:4 / M:2 / I:80	Q:6 / M:2 / I:80	Q:6 / M:1 / I:65	SORT
HARD	Q:6 / M:2 / I:80	Q:6 / M:2 / I:80	Q:6 / M:1 / I:65	SORT

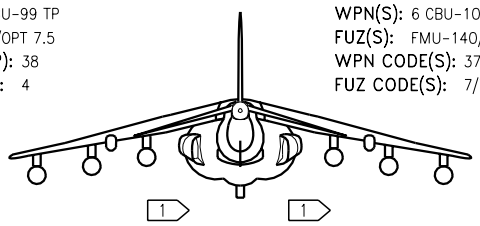
NOTE: 1 MK 20 NOT AUTHORIZED ON STATION 3 OR 5, IAW VOL.II, CHAPTER 5

AV8BB-TAC-30-(94-15)11-CATI

AV-8 WEAPONEERING

WPN(P): 6 CBU-99 TP
FUZ(P): 339/OPT 7.5
WPN CODE(P): 38
FUZ CODE(P): 4

WPN(S): 6 CBU-100
FUZ(S): FMU-140/H0F 1800
WPN CODE(S): 37
FUZ CODE(S): 7/7



MEAN ELV: SEA LEVEL

ALT 25000
FPA 15°
CA 45/30°
510-200'
A/S - ALT

7.6 RAMP, NM
11800/12500
PDA/APEX
3.2 PAC, NM

A/S 350
ALT 12500
FPA 30°
3.0 ACD

CHKPT 8000 116/7.0° MIL/DEG

199 SA/TOF 12.7
A/S 550 ALT 6000'

	QTY	MLT	INT	
PRI	2	2	N/A	N/A ms
ALT	4	2	120'	350 ms

MIN RIP SGL	21'	60 ms
MIN RIP PRS	42'	120 ms
MAXIMUM	1400'	4000 ms

MILS:	TGT	100m	200m
@ACD	1.7	21 mR	42 mR
@CHK	2.5	27 mR	84 mR
@REL	3.2	36 mR	72 mR

MIN FUZ TOF 10.5 = 5200'

Zmin:	5200 (NF)	10 kts =	61'
LAW:	5000	100' =	29'
PUC:	3500	1 deg =	71'
BOMB: y /ⓝ		5 mil =	72'

1.5 deg = 18 kts = 372' = 7.5 mil

TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:2 / M:2 / I:N/A	Q:4 / M:2 / I:120	Q:4 / M:1 / I:100	SORT
MED	Q:4 / M:2 / I:42	Q:6 / M:2 / I:80	Q:6 / M:1 / I:65	SORT
HARD	Q:6 / M:2 / I:42	Q:6 / M:2 / I:80	Q:6 / M:1 / I:65	SORT

NOTE: 1 MK 20 NOT AUTHORIZED ON STATION 3 OR 5, IAW VOL.II, CHAPTER 5

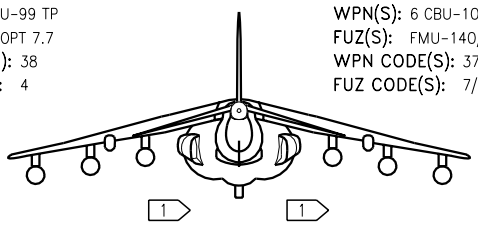
AV8BB-TAC-30-(94-16)11-CATI

CBU

AV-8 WEAPONEERING

WPN(P): 6 CBU-99 TP
FUZ(P): 339/OPT 7.7
WPN CODE(P): 38
FUZ CODE(P): 4

WPN(S): 6 CBU-100
FUZ(S): FMU-140/HOF 2600'
WPN CODE(S): 37
FUZ CODE(S): 7/9



CBU-99 (1)	CBU-99 (2)	CBU-99 (3)	(4)	CBU-99 (5)	CBU-99 (6)	CBU-99 (7)
		[1]		[1]		

ALT 25000
FPA 15°
CA 45/30°
510-200'
A/S - ALT

4.6 RAMP, NM
16800/17500
PDA/APEX
3.8 PAC, NM

MEAN ELV: SEA LEVEL

A/S 350
ALT 17500
FPA 45°
2.7 ACD

CHKPT 12000 98/6.0° MIL/DEG

171 SA/TOF 14.2
A/S 550 ALT 8000'

	QTY	MLT	INT	
PRI	2	2	N/A	N/A ms
ALT	4	2	120'	500 ms

MIN RIP SGL	15'	60 ms
MIN RIP PRS	29'	120 ms
MAXIMUM	960'	4000 ms

MILS:	TGT	100m	200m
@ACD	1.5	19 mR	38 mR
@CHK	2.1	22 mR	44 mR
@REL	3.0	33 mR	66 mR

MIN FUZ TOF 10.7 = 7100'

Zmin:	7100 (NF)	10 kts =	60'
LAW:	5000	100' =	12'
PUC:	3300	1 deg =	55'
BOMB:	y / (n)	5 mil =	61'

1.7 deg = 15 kts = 763' = 7.5 mil

TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50m/165'	AREA > 100m/325'
SOFT	Q:2 / M:2 / I:N/A	Q:4 / M:2 / I:120	Q:4 / M:1 / I:100	SORT
MED	Q:4 / M:2 / I:28	Q:6 / M:2 / I:80	Q:6 / M:1 / I:65	SORT
HARD	Q:6 / M:2 / I:28	Q:6 / M:2 / I:80	Q:6 / M:1 / I:65	SORT

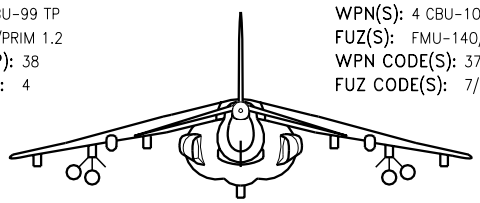
NOTE: [1] MK 20 NOT AUTHORIZED ON STATION 3 OR 5, IAW VOL.II, CHAPTER 5

AV8BB-TAC-30-(94-17)11-CATI

AV-8 WEAPONEERING

WPN(P): 4 CBU-99 TP
FUZ(P): 339/PRIM 1.2
WPN CODE(P): 38
FUZ CODE(P): 4

WPN(S): 4 CBU-100
FUZ(S): FMU-140/HOF 700'
WPN CODE(S): 37
FUZ CODE(S): 7/3



(1)	2 CBU-99 (2)	(3)	(4)	(5)	2 CBU-99 (6)	(7)

ALT
25000
FPA 15°
CA 15°
450-200'
A/S - ALT

13.5 RAMP, NM
2400/3000
PDA/APEX
1.8 PAC, NM

MEAN ELV: SEA LEVEL

A/S 400
ALT 3000
FPA 10°
2.3 ACD
CHKPT 1400 70/4.0° MIL/DEG
148 SA/TOF 6.2
A/S 500 ALT 1000'

	QTY	MLT	INT	
PRI	4	1	70'	90 ms
ALT	4	2	150'	210 ms

MIN RIP SGL	70'	90 ms
MIN RIP PRS	150'	210 ms
MAXIMUM	890'	1300 ms

MILS:	TGT	100m	200m
@ACD	3.5	41 mR	82 mR
@CHK	7.6	85 mR	170 mR
@REL	9.7	107 mR	214 mR

MIN FUZ TOF 5.6 = 905'

Zmin:	905 (NF)	10 kts =	43'
LAW:	905	100' =	12'
PUC:	575	1 deg =	59'
BOMB:	Ⓨ / n	5 mil =	56'

1.4 deg = 20 kts = 700' = 7.5 mil

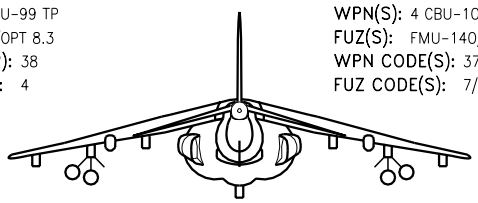
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50M/165'	AREA > 100m/325'
SOFT	Q: 2 /M:2/I: N/A	Q: 2 /M:2/I: N/A	Q: 2 /M:1/I: 100	SORT
MED	Q: 2 /M:2/I: 150	Q: 4 /M:2/I: 150	Q: 4 /M:1/I: 70	SORT
HARD	Q: 4 /M:2/I: 150	Q: 4 /M:2/I: 150	SORT	SORT

AV8BB-TAC-30-(94-18)11-CATI

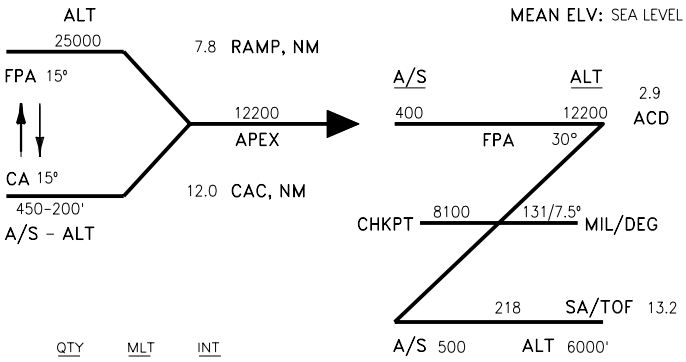
AV-8 WEAPONEERING

WPN(P): 4 CBU-99 TP
FUZ(P): 339/OPT 8.3
WPN CODE(P): 38
FUZ CODE(P): 4

WPN(S): 4 CBU-100
FUZ(S): FMU-140/H0F 1800'
WPN CODE(S): 37
FUZ CODE(S): 7/7



(1)	2 CBU-99 (2)	(3)	(4)	(5)	2 CBU-99 (6)	(7)



	QTY	MLT	INT	
PRI	2	2	N/A	N/A ms
ALT	4	2	120'	340 ms

MIN RIP SGL	40'	90 ms
MIN RIP PRS	80'	210 ms
MAXIMUM	1400'	4000 ms

MILS:	TGT	100m	200m
@ACD	1.7	20 mR	40 mR
@CHK	2.6	26 mR	52 mR
@REL	3.3	37 mR	74 mR

MIN FUZ TOF 10.2 = 4000'

Zmin:	4000 (NF)	10 kts =	81'
LAW:	4000	100' =	28'
PUC:	2300	1 deg =	73'
BOMB:	y /ⓝ	5 mil =	66'

1.4 deg = 12 kts = 354' = 7.5 mil

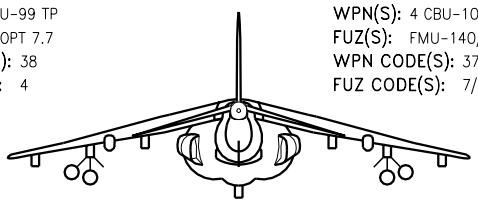
TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50M/165'	AREA > 100m/325'
SOFT	Q: 2 /M:2/I: N/A	Q: 2 /M:2/I: 170'	Q: 2 /M:1/I: 100	SORT
MED	Q: 2 /M:2/I: 80	Q: 4 /M:2/I: 80	Q: 4 /M:1/I: 70	SORT
HARD	Q: 4 /M:2/I: 80	Q: 4 /M:2/I: 80	SORT	SORT

AV8BB-TAC-30-(94-19)11-CATI

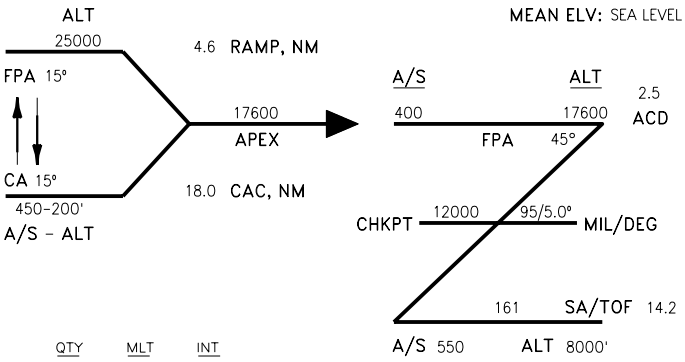
AV-8 WEAPONEERING

WPN(P): 4 CBU-99 TP
FUZ(P): 339/OPT 7.7
WPN CODE(P): 38
FUZ CODE(P): 4

WPN(S): 4 CBU-100
FUZ(S): FMU-140/HOF 2600'
WPN CODE(S): 37
FUZ CODE(S): 7/9



(1)	2 CBU-99 (2)	(3)	(4)	(5)	2 CBU-99 (6)	(7)



MEAN ELV: SEA LEVEL

	QTY	MLT	INT	
PRI	2	2	N/A	N/A ms
ALT	4	2	120'	500 ms

MIN RIP SGL	30'	90 ms
MIN RIP PRS	60'	210 ms
MAXIMUM	960'	4000 ms

MILS:	TGT	100m	200m
@ACD	1.5	19 mR	38 mR
@CHK	2.1	23 mR	46 mR
@REL	3.1	33 mR	66 mR

MIN FUZ TOF 9.2 = 4500'

Zmin:	4500 (NF)	10 kts =	60'
LAW:	4500	100' =	12'
PUC:	700	1 deg =	55'
BOMB:	y /ⓝ	5 mil =	61'

1.7 deg = 15 kts = 763' = 7.5 mil

TGT CLASS	UNITARY	AREA < 50m/165'	AREA > 50M/165'	AREA > 100m/325'
SOFT	Q: 2 /M:2/I: N/A	Q: 2 /M:2/I: 120	Q: 2 /M:1/I: 100	SORT
MED	Q: 2 /M:2/I: 60	Q: 4 /M:2/I: 80	Q: 4 /M:1/I: 70	SORT
HARD	Q: 4 /M:2/I: 60	Q: 4 /M:2/I: 60	SORT	SORT

AV8BB-TAC-30-(94-20)11-CATI

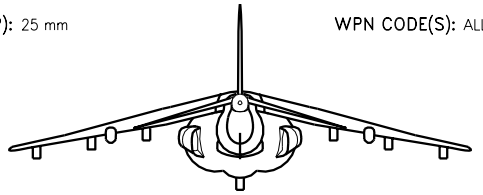
AV-8 WEAPONEERING

WPN(P): GAU-12

WPN CODE(P): 25 mm

WPN(S): GAU-12

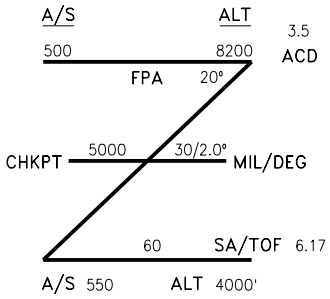
WPN CODE(S): ALL OTHER 25mm



GUN

(1) (2) (3) (4) (5) (6) (7)

MEAN ELV: SEA LEVEL



MILS:	TGT	100m	200m
@ACD	1.7	20 mR	40 mR
@CHK	2.5	27 mR	52 mR
@REL	2.9	32 mR	64 mR

Zmin: 3000 — 10 kts = 28'
LAW: 3000 — 100' = 50'
PUC: 2000 — 1 deg = 45'
BOMB: y / ⓝ — 5 mil = 136'

2.1 deg = 73 kts = 408' = 7.5 mil

AV8B-TAC-30-(94-21)11-CATI

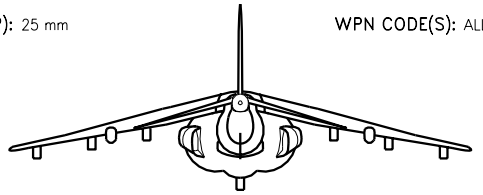
AV-8 WEAPONEERING

WPN(P): GAU-12

WPN(S): GAU-12

WPN CODE(P): 25 mm

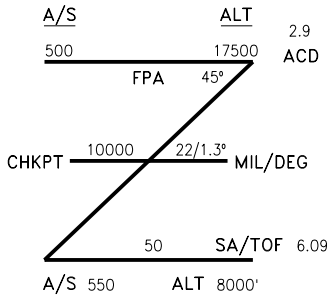
WPN CODE(S): ALL OTHER 25mm



GUN

(1) (2) (3) (4) (5) (6) (7)

MEAN ELV: SEA LEVEL



MILS:	TGT	100m	200m
@ACD	1.3	15 mR	30 mR
@CHK	2.2	24 mR	48 mR
@REL	2.7	30 mR	60 mR

Zmin: 7050 — 10 kts = 12'

LAW: 5000 — 100' = 10'

PUC: 3000 — 1 deg = 21'

BOMB: y / ⓝ — 5 mil = 74'

5.3 deg = 93 kts = 1100' = 7.5 mil

AV8BB-TAC-30-(94-22)11-CATI

GAU-12 GUN

BACKUP PROGRAMS

BACKUP PROGRAMMING (ACP)

Direct Mode

1. Manual control knob - NORM
2. All ACP indicators - DASH (–) or ZERO (0)
3. Delivery mode - DIR (May require selection of A/G MASTER mode)
   a. If no weapon programming exists fuzing indicates SAFE.
4. Station select button(s) - AS REQUIRED
   a. When a station is selected, ACP displays quantity 01, multiple 1, and interval 000.
   b. If multiple equals one, quantity increases to equal stations selected if parent station load or the number of bombs possible if ITER load; interval initializes to 400 when quantity exceeds multiple.
5. Fuzing - SELECT N, T, N/T, PR, or OP
6. Quantity - SET
7. Multiple - SET (if required)
   a. A multiple of 1 or a value equal to the number of stations selected can be used. (Maximum allowable multiple = 2)
8. Interval - SET
   a. Interval can be reduced to preset minimums in milliseconds.

WARNING

- More than one type of weapon can be selected when stations selected are loaded differently.
- No electrical fuzing available.
- An unsafe interval can be selected. See General Notes.

DSL(1) Mode

1. Manual (MAN) control knob - N/T, N, or T
   a. Moving knob out of NORM selects DSL(1) and fuzing option.
   b. Program option switches are inoperative and display dash (–) or zero (0).
   c. Selection of the DSL(1) mode will cause the stations last selected in DSL(1) to be selected.
2. Station select button(s) - AS REQUIRED

WARNING

A maximum of two stations may be selected only when the two stations are symmetric and the stations selected are loaded with the same store type.

ORDNANCE NOTES

GENERAL NOTES

A. Only store loadings shown in NWP 3-22.5-AV8B, Vol. II, Chapter 5 of the Tactical Manual are authorized.

B. Only those multiple store configurations shown in NWP 3-22.5-AV8B, Vol. II, Chapter 5 of the Tactical Manual are authorized. Loading stores in a configuration that is not shown or loading stores on a station that is shown empty (no store or mixed store loading symbol displayed) is not authorized. Allowable mixed load configurations are specified via the mixed store loading symbol (numbered square).

WARNING

Since unarmed releases (safe jettison) cannot be assured, live store jettison must be performed at an altitude and in a delivery that will allow SAFE escape should the fuze inadvertently arm.

C. In the DSL (1) mode, a maximum of two stations may be selected only when the two stations selected meet these conditions:

1. The two stations selected are symmetric to each other (e.g., 1 and 7).
2. The two stations selected are loaded with the same store type.

D. For mixed stores configurations:

1. Only one store type may be selected for release on any bomb run.
2. When carrying mixed stores, any store may be released first unless specifically restricted in NWP 3-22.5-AV8B, Vol. II, Chapter 5 of the Tactical Manual.

3. When carrying mixed stores, the most restrictive carriage limitations apply.

E. Release intervals found under "MIN INT FOR AUTO, CCIP, DSL" column are valid only if the stores are released in the normal release sequence and order. Ripple releases are not authorized if stores are released out of their normal sequence or order.

F. Use the following throttle settings for the BRU-36/A or BRU-36A/A bomb racks:

STATIONS 1, 3, 4, 5, AND 7:	100/100 (fwd/aft). All authorized stores and suspension equipment.
STATIONS 2 AND 6:	66/100 (fwd/aft). Mk 81 bomb w/CON FIN or Mk 14 LD/HD fin. Mk 82/BDU-45 bomb w/CON FIN or Mk 15 LD/HD or BSU-86 LD/HD or BSU-33 fin. Mk 83 bomb w/CON FIN, BSU-85 LD/HD. Mk 77 Fire Bomb. GBU-12 Guided Bomb. GBU-16 Guided Bomb. Mk 20/CBU-99/CBU-100 Rockeye. CBU-78A/B GATOR.
	100/100 (fwd/aft). All other authorized stores and suspension equipment.

G. Singles, pairs, ripple singles, and ripple pairs releases are authorized unless specifically prohibited. Bomb ripple releases with MULT greater than 2 are not authorized.

H. Maximum authorized bank angle for release and/or jettison is 15°, unless otherwise noted.

I. Use of the step option is not authorized except when firing 2.75-inch rockets, 5.0-inch rockets, AIM-9, and AGM-65E, AGM-65F, and AGM-122 missiles.

J. Use the following table to determine the minimum interval which may be used for DIR mode deliveries. These minimums must be strictly adhered to.

CONTINUED

MINIMUM DIR MODE INTERVAL

WEAPON	PARENT RACK
	Ripple Singles
Mk 81 CONFIN	40 ms
Mk 81/Mk 14 LD	40 ms
Mk 81/Mk 14 HD	110 ms
Mk 82 CONFIN (BSU-33 and MAU-93)	30 ms
Mk 82/Mk 15 LD (BSU-86 LD)	30 ms
Mk 82/Mk 15 HD (BSU-86 HD)	110 ms
Mk 83 CONFIN	60 ms
Mk 83/BSU-85 HD/LD	60 ms
Mk 20 Mod 7, 8, 9, 10, 11, 12	80 ms
CBU-78A/B, B/B GATOR	80 ms
CBU-99/-100	80 ms
Mk 77 Mod 4 and 5	40 ms
Mk 76/BDU-33	—
Mk 106/BDU-48	—

WEAPON	ITER	
	Ripple Singles	[1] Ripple Pairs
Mk 81 CONFIN	60 ms	90 ms
Mk 81/Mk 14 LD	not authorized	not authorized
Mk 81/Mk 14 HD	200 ms	350 ms
Mk 82 CONFIN (BSU-33 & MAU-93)	120 ms	150 ms
Mk 82/Mk 15 LD (BSU-86 LD)	120 ms	120 ms
Mk 82/Mk 15 HD (BSU-86 HD)	200 ms	350 ms

WEAPON	ITER	
	Ripple Singles	[1] Ripple Pairs
Mk 83 CONFIN	90 ms	not authorized
Mk 83/BSU-85 HD/LD	120 ms	120 ms
Mk 20 Mod 7, 8, 9, 10, 11, 12	110 ms	210 ms
CBU-78A/B, B/B GATOR	110 ms	210 ms
CBU-99/100	110 ms	210 ms
Mk 77 Mod 4 and 5	not authorized	not authorized
Mk 76/BDU-33	90 ms	240 ms
Mk 106/BDU-48	200 ms	200 ms

[1] When more than one station is selected in DIR mode, the only multiples selectable are one and a number equal to stations selected. Releasing a multiple greater than two is prohibited. Select only two symmetrical stations at a time to accomplish ripple pairs. Select stations in order from outboard to inboard. Selected stations must have identical loadings.

WARNING

In the DIR mode, it is possible to select release intervals below the established safe minimum interval for release; therefore, the minimum release intervals shown above must be strictly adhered to. Selection of more than one type store for a planned release is not authorized.

Use of incorrect SMC codes to decrease bomb spacing will result in invalid ballistics and may create a hazardous release condition.

K. Maximum authorized number of stations that may be simultaneously jettisoned using selective jettison is two.

L. For asymmetric loadings in excess of 90,000 inch pounds;

CONTINUED

maximum carriage and release speed shall be limited to 520 KCAS/0.88 IMN.

WARNING

With large asymmetries, flying qualities rapidly degrade at high MACH. Lateral stick requirements to maintain wings level may exceed the high speed stop, delaying dive recovery and increasing altitude loss. Release at minimum release altitude should be avoided.

M. The carriage of wing mounted external stores and suspension equipment decreases the aircraft's maximum aft CG limit by an amount based on the stability index (SI) for each loading configuration. The authorized loadings of Figure 5-3 in NWP 3-22.5-AV8B Volume II of the Tactical Manual do not necessarily ensure compliance with aircraft SI adjusted CG limits. It is the pilot's responsibility to compute aircraft weight and balance prior to flight and ensure that the CG is maintained within limits. The AV-8B mission planning system (AMPS/NAMPS) can provide the required weight and balance information.

N. Speed brakes must be retracted when stores are released. Failure to do so may adversely affect store separation characteristics.

SPECIFIC NOTES

1. 300 gallon external fuel tanks are to be configured with a single, horizontal tail fin on the outboard side of the tank.

2. Lateral stick inputs not to exceed one-half high-speed stop under the following conditions:

   (a) Loadings greater than 650 pounds on centerline station 4.
   (b) Loadings greater than 1,400 pounds on stations 2 and 6.
   (c) All fuel tank configurations except empty inboard (stations 3 and 5) tanks.

3. Downloading of individual stores from authorized ITER loadings is not authorized (except for Mk 76, Mk 106, BDU-33, and BDU-48 practice bombs). Symmetrical downloading of ITER's with Mk 76, Mk 106, BDU-33, or BDU-48 practice bombs is authorized.

4. Airspeed restrictions for tail fin mods authorized for the AV-8B are:

Mk 81 LD:	Mk 14 Mod 1 and 2 ONLY - No Restrictions
Mk 81 HD:	Mk 14 Mod 1 fin (cable wrapped) - 350 KCAS maximum release
	Mk 14 Mod 2 fin (cable wrapped) - 500 KCAS maximum release
Mk 82 LD:	Mk 15 Mod 4, 4A, or 6 fins - No restrictions BSU-86 - No restrictions
BDU-45/B LD:	Mk 15 Mod 4, 4A, or 6 fins - No restrictions BSU-86 - No restrictions
Mk 82 HD:	Mk 15 Mod 4 or 4A fins (cable wrapped) - 550 KCAS maximum release Mk 15 Mod 6 fins - 550 KCAS maximum release BSU-86 - No restrictions
BDU-45 HD:	Mk 15 Mod 4 and 4A fins (cable wrapped) - 550 KCAS maximum release Mk 15 Mod 6 fins - 550 KCAS maximum release

The term "cable wrapped" refers to four loops of aircraft control cable (wire rope, steel, NSN 4010-00-222-4474) wrapped around the fin band to retain the fin bands on the fin during fin opening.

WARNING

Use of Mk 15 Mod 1, 1A, 2, 2A, 3, and 3A fins is prohibited.

5. Mixed stores loading of Mk 76 and BDU-33 or Mk 106 or BDU-48 practice bombs on the ITER is not authorized. Mixed stores loading of practice bombs (Mk 76/106, BDU-33/-48) with Mk 58 MLM's is authorized in acordance with Figure 5-3 in NWP 3-22.5-AV8B, Volume II.

6. For single and odd quantity ripple releases of Mk 83 bombs, airspeed during carriage, delivery, and dive recovery must not exceed 0.88 IMN/520 KCAS or the limits of Figure 5-3 in NWP 3-22.5-AV8B, Volume II , whichever is less.

WARNING

Above 0.88 IMN as g is increased above 3.0, lateral stick requirements to maintain wings level can rapidly exceed the high speed stop, delaying dive recovery and increasing altitude loss. Releases at minimum release altitude should be avoided.

7. See pertinent data for fuzes and initiators below:

Fuze/ Device	Maximum Carriage Airspeed	Maximum Release Airspeed	Minimum Release Airspeed	Remarks
M904 Mechanical Nose Fuze	600 KCAS	600 KCAS	175 KCAS	Safety clip is the only authorized arming wire retention device.
Mk 344 Fuze	None	None	None	Not authorized for use with retarded Mk 80 series bombs.
Mk 339 Mechanical Time Fuze	None	None	225 KCAS	Refer to fuze description for limitations.
Mk 376	None	None	400 KCAS (HD)	Minimum KCAS applies to retarded release.
FMU-140/B Dispenser Proximity Fuze	None	None	225 KCAS	
Mk 43 Target Detecting Device	None	None	None	See Specific Note 8 for authorized weapons and MRIs.
Mk 13 Initiator	None	None	300 KCAS	
FMU-139/B Electrical Fuze	None	None	400 KCAS	Authorized Weapons: Mk 82 with MAU-93, BSU-33, Mk 15 MOD 4/4A/6 (LD/HD), BSU-86 (LD/HD), Mk 83 with CONFIN, BSU-85 (LD/HD), GBU-12 C/B, GBU-12 D/B, GBU-16 A/B, GBU-16 B/B.
Mk 20 Mk 20A1 Sensing Element Proximity Fuze	None	None	None	Not Authorized.

CONTINUED

8. Mk 43 TDD authorized for single and ripple single releases from parent rack only for the following weapon and corresponding MRIs:

   Mk 82, Mk 83 Low Drag-500 ms for DSL, equivalent foot spacing in CCIP, AUTO.

   Mk 82 High Drag-240 ms for DSL, equivalent foot spacing in CCIP, AUTO.

   Mk 83 High Drag-200 ms for DSL, equivalent foot spacing in CCIP, AUTO.

9. Dive recoveries with tanks should be performed with caution. A maximum of 4g should be used for planned dive recoveries.

WARNING

Flying qualities are degraded due to the sudden and severe onset of buffet. Releases at the minimum release altitude should be avoided due to excessive altitude lost if severe buffet is encountered during the pullout.

10. With pods set to ripple, only MULT settings of 1 or 2 are authorized with LAU-61 or LAU-68 rocket launchers.

11. Aircraft software will not balance asymmetric load condition caused by hung weapons on ITERS.

12. If carried singly on ITER, use store code for Mk 106 practice bomb. If carried on ITER with practice bombs loaded on shoulder stations, use store code of the loaded practice bombs. Mixed types of practice bombs (Mk 76/106) on the same ITER are prohibited. Mixed loads of practice bombs are authorized on the aircraft, i.e., an ITER load of Mk 76 on station 2 and an ITER load of BDU-48 on station 6.

13. Release at normal acceleration less than 1.0g will result in bomb-to-remaining-bomb collision.

14. Authorized only for Omnibus 6+C and Omnibus 7 equipped aircraft.

15. Single releases not authorized on Omnibus R-3 equipped aircraft.

STORES LOADING

Drag Index System

The following charts utilize the drag index system to effectively present the many combinations of weight/drag effects on performance. The charts list the individual weight and drag index of the various external stores and suspension equipment for the AV-8B aircraft. When calculating total drag the following basic drag indices apply to the aircraft:

AV-8B	Basic Drag Index
Day Attack aircraft	O
Night Attack aircraft	1.4
Radar aircraft	2.4

BOMBS:

STORE CODE	DDI LEGEND	WEAPON CONFIGURATION [1]	WEIGHT (LBS) [2]	DRAG INDEX [2]
OO	NONE	No store (empty station)	N/A	N/A
O1	76	Mk-76 on PMBR	26	O.75
25	76	Mk-76 on ITER	26	O.75
O2	1O6	Mk-1O6 on PMBR	6	1.5O
26	1O6	Mk-1O6 Mod 5 on ITER [3]	6	1.5O
27	BD33	BDU-33 on ITER	25	O.75
28	BD48	BDU-48 on ITER	1O	1.5O
O3	81	STD Mk-81 CONFIN/MAU-94/B, blunt nose	26O	1.OO
O4	81	STD Mk-81 CONFIN/MAU-94/B, pointed nose	26O	1.OO
O5	81H	STD Mk-81, Mk-14 HD	296	2.OO
O6	81L	STD Mk-81, Mk-14 LD	296	2.OO
O7	81HL 81L 81H	STD MK-81, Mk-14 IFS HD/LD	296	2.OO
O8	82	STD Mk-82 CONFIN/MAU-93/B, blunt nose	5O4	1.35
O9	82	TP Mk-82 CONFIN/MAU-93/B, blunt nose	514	1.35
1O	82	STD Mk-82 CONFIN/MAU-93/B, pointed nose	5O4	1.35
11	82	TP Mk-82 CONFIN/MAU-93/B, pointed nose	514	1.35

BOMBS:

STORE CODE	DDI LEGEND	WEAPON CONFIGURATION [1]	WEIGHT (LBS) [2]	DRAG INDEX [2]
12	82H	STD Mk-82, MK-15 HD, all nose configurations	55O	2.75
13	82H	TP Mk-82, Mk-15 HD, all nose configurations	561	2.75
14	82L	STD Mk-82, Mk-15 LD, all nose configurations	55O	2.75
15	82L	TP Mk-82, Mk-15 LD, all nose configurations	561	2.75
16	82HL 82L 82H	STD Mk-82, Mk-15 IFS HD/LD, all nose configurations	55O	2.75
17	82HL 82L 82H	TP Mk-82, Mk-15 IFS HD/LD, all nose configurations	561	2.75
77	82L	STD Mk-82, BSU-33, blunt nose	5O5	1.5O
78	82L	TP Mk-82, BSU-33, blunt nose	515	1.5O
79	82L	STD Mk-82, BSU-33, pointed nose	5O6	1.5O
8O	82L	TP Mk-82, BSU-33, pointed nose	516	1.5O
93	82L	STD Mk-82, BSU-86 LD, all nose configurations	549	1.5O
94	82L	TP Mk-82, BSU-86 LD, all nose configurations	559	1.5O
95	82H	STD Mk-82, BSU-86, all nose configurations	549	1.5O
96	82H	TP Mk-82, BSU-86 HD, all nose configurations	559	1.5O
97	82HL 82L 82H	STD Mk-82, BSU-86 IFS HD/LD, all nose configurations	549	1.5O
98	82HL 82L 82H	TP Mk-82, BSU-86 IFS HD/LD, all nose configurations	559	1.5O
2O	83	STD Mk-83, CONFIN, blunt nose	975	2.25
21	83	TP Mk-83, CONFIN, blunt nose	989	2.25
22	83	STD Mk-83, CONFIN, pointed nose	978	2.25
23	83	TP Mk-83, CONFIN, pointed nose	992	2.25
62	83L	STD Mk-83, BSU-85 LD, all nose configurations	1O12	2.25
63	83L	TP Mk-83, BSU-85 LD, all nose configurations	1O26	2.25
64	83H	STD Mk-83, BSU-85 HD, all nose configurations	1O12	2.25
65	83H	TP Mk-83, BSU-85 HD, all nose configurations	1O26	2.25
66	83HL 83L 83H	STD Mk-83, BSU-85 IFS HD/LD, all nose configurations	1O12	2.25
67	83HL 83L 83H	TP Mk-83, BSU-85 IFS HD/LD, all nose configurations	1O26	2.25

CBUs/FIREBOMBS/LGBs/ILLUMINATION FLARES:

STORE CODE	DDI LEGEND	WEAPON CONFIGURATION [1]	WEIGHT (LBS) [2]	DRAG INDEX [2]
33	CB78	CBU-78/B GATOR (day/night attack)	490	4.50
37	20	STD Mk-20 Mod 8, 10, 12 ROCKEYE/CBU-100/B, A/B (day/night attack)	490	4.50
38	20	TP Mk-20 Mod 7, 9, 11 ROCK-EYE, CBU-99/B, A/B (day/night attack)	505	4.50
38	20	STD and TP Mk-20 Mod 7, 8, 11, 12 ROCKEYE, CBU-100/B, and CBU-99/B (radar)	505	4.50
40	77M4	Mk-77 Mod 4/5 fire bomb	545	4.00
18	GB12	GBU-12 500 lb laser guided bomb	609	3.25
30	GB16	GBU-16 1000 lb laser guided bomb	1096	5.50
47	SUF	Mk-24/Mk-45 flares in SUU-44/A dispenser (software only)	28/352	2.8/4.5
72	SUF25	LUU-2 flares in SUU-25F/A dispenser	28/486	2.8/4.5
73	LU2	LUU-2 flare on ITER	28	2.80

AIR-TO-AIR AND AIR-TO-GROUND MISSILES, SPECIAL USE PODS:

STORE CODE	DDI LEGEND	WEAPON CONFIGURATION [1]	WEIGHT (LBS) [2]	DRAG INDEX [2]
51	9M	AIM-9M sidewinder missile	189	2.25
53	9L	AIM-9L sidewinder missile	189	2.25
54	MAV	AGM-65E/CATM-65E laser maver-ick missile (day attack)	640	3.25
54	LMAV	AGM-65E/CATM-65E laser maver-ick missile (night attack)	640	3.25
55	IMAV	AGM-65F/CATM-65F infrared mav-erick missile (night attack and ra-dar)	669	3.20
59	SA	AGM-122 sidearm missile (day and night attack)	203	2.25
76	TACT	Special use pods (TACTS, ACMI, AIS, etc.)	122	2.0

ROCKETS:

STORE CODE	DDI LEGEND	WEAPON CONFIGURATION [1]	WEIGHT (LBS) [2]	DRAG INDEX [2]
41	1OS	[4] LAU-1O series rocket launcher, 4 x 5.OO″ ZUNI, single selected	138/688	.75/8.5
42	1OR	[4] LAU-1O series rocket launcher, 4 x 5.OO″ ZUNI, ripple selected	138/688	.75/8.5
43	61S	[5] LAU-61 series rocket launcher, 19 x 2.75″, single selected	21/554	.25/15.O
44	61R	[5] LAU-61 series rocket launcher, 19 x 2.75″, ripple selected	21/554	.25/15.O
45	68S	[5] LAU-68 series rocket launcher, 7 x 2.75″, single selected	21/232	.25/5.O
46	68R	[5] LAU-68 series rocket launcher, 7 x 2.75″, ripple selected	21/232	.25/5.O
81	1OS	[6] LAU-1O series rocket launcher, 4 x 5.OO″ ZUNI, single selected	128/678	.75/8.5
82	1OR	[6] LAU-1O series rocket launcher, 4 x 5.OO″ ZUNI, ripple selected	128/678	.75/8.5
83	61S	[7] LAU-61 series rocket launcher, 19 x 2.75″, single selected	18/551	.25/15.O
84	61R	[7] LAU-61 series rocket launcher, 19 x 2.75″, ripple selected	18/551	.25/15.O
85	68S	[7] LAU-68 series rocket launcher, 7 x 2.75″, single selected	18/229	.25/5.O
86	68R	[7] LAU-68 series rocket launcher, 7 x 2.75″, ripple selected	18/229	.25/5.O
87	61S	[8] LAU-61 series rocket launcher, 19 x 2.75″, single selected	23/556	.25/15.O
88	61R	[8] LAU-61 series rocket launcher, 19 x 2.75″, ripple selected	23/556	.25/15.O
89	68S	[8] LAU-68 series rocket launcher, 7 x 2.75″, single selected	23/234	.25/5.O
9O	68R	[8] LAU-68 series rocket launcher, 7 x 2.75″, ripple selected	23/234	.25/5.O

DESTRUCTORS:

STORE CODE	DDI LEGEND	WEAPON CONFIGURATION [1]	WEIGHT (LBS) [2]	DRAG INDEX [2]
6O	MINE	STD Mk-36 DST, Mk-15 HD, day attack (also STD Mk-62 QUICK-STRIKE mine, Mk-15 HD for day attack, software only)	553	2.7O
6O	36H	STD Mk-36 DST, Mk-15 HD, night attack	553	2.7O
61	MINE	TP Mk-36 DST, Mk-15 HD, day attack (also TP Mk-62 QUICK-STRIKE mine, Mk-15 HD for day attack, software only)	563	2.7O
61				
68	4OH	STD Mk-4O DST, MAU-91 HD (software only)	1O41	4.5O
69	4OH	TP Mk-4O DST, MAU-91 HD (software only)	1O55	4.5O
74	MINE	STD Mk-36 DST, BSU-86 HD, day attack (also STD Mk-62 QUICK-STRIKE mine, BSU-86 HD for day attack, software only)	551	2.7O
74	36H	STD Mk-36 DST, BSU-86 HD night attack	551	2.7O
75	MINE	TP Mk-36 DST, BSU-86 HD, day attack (also TP Mk-62 QUICK-STRIKE mine, BSU-86 HD for day attack, software only)	561	2.7O
75	36H	TP Mk-36 DST, BSU-86 HD, night attack	5612	2.7O

MISCELLANEOUS (BLIVET, TANKS, DECM, ETC.):

STORE CODE	DDI LEGEND	WEAPON CONFIGURATION [1]	WEIGHT (LBS) [2]	DRAG INDEX [2]
19	-	Spare		
24	TEST	Test set		
29	-	Spare		
31	-	Spare		
32	-	Spare		
34	-	Spare		
35	-	Spare		
36	-	Spare		
39	SID	ADSID III (day attack, software only)	37	1.20
39	SID	ADSID V (night attack, software only)	5.7	2.00
48	SU23	SSQ-23/A sonobuoy, SUU-44/A dispenser	18/236	4.5
49	SU50	SSQ-50/A sonobuoy, SUU-44/A dispenser	40/368	4.5
50	EBC	MXU-648A/A external baggage container	[9] 396	5.50
52	-	Spare		
55	-	Spare (day attack aircraft)		
56	FUEL	300 gallon fuel tank	[10] 198	7.75
57	DECM	AN/ALQ-164 DECM pod	415	9.00
58	-	AN/ALQ-165 ASPJ DECM pod (night attack and radar, spare on day attack)	505	9.20
59	-	Spare (radar)		
70	-	Spare		
71	-	Spare		
91	-	Spare		
92	-	Spare		
99	-	No stores control unit installed		

CARRIAGE AND MISCELLANEOUS EQUIPMENT:

EQUIPMENT	WEIGHT (LBS)	DRAG INDEX [11]
A/A37B-3 PMBR	96	3.75
ADU-299A/A	24	[12]
BRU-42/A ITER	129	4.10
GAU-12/U, 25 MM gun system (empty)	1014	6.70
25 MM unexpended round	1	N/A
25 MM empty case	0.5	N/A
LAU-7/A-5 (AIM-9/AGM-122 launcher)	90	1.40
LAU-10D/A (4 x 5.00″ ZUNI pod)	136	5.50
LAU-61C/A (19 x 2.75″ FFAR pod)	155	10.25
LAU-68D/A (7 x 2.75″ FFAR pod)	85	3.25
LAU-117A (MAV launcher)	135	1.10
SUU-25F/A LUU-2 dispenser (empty)	262	4.25
SUU-44/A	128	4.25
IFR probe	107	2.30
Strakes	96	1.00
NAVFLIR	211	1.40
AN/AAQ-28 Litening II Targeting Pod	440	4.0/2.0 (open/ standby)
Outboard pylon W/BRU-36	96	1.40
Outboard pylon W/O BRU-36	67	1.40
Intermediate pylon	131	2.55
Inboard pylon	143	1.80
Centerline pylon	143	1.80

NOTES:

[1] The weapon configuration listed is that upon which the ballistics are based for that store code and should not be interpreted to mean that only that exact configuration is authorized with a specific stores code. Refer to NWP 3-22.5-AV8B, Vol. II, Chapter 5, External Stores Limitations, for authorized loads.

[2] Weight and drag index is provided for single stores carried on parent station or ITERs. For items carried in rocket pods or flare/sonobuoy dispensers, the weight or drag index of the individual store is given followed by the weight or drag index of the fully loaded pod or dispenser. Store code 27 (weight 28/486, drag index 2.8/4.25) shows that the weight of a LUU-2 is 28 lbs., and a SUU-25 with a full load of 8 LUU-2's weighs 486 lbs. Drag index is 2.8 for the flare, 4.25 for the full dispenser.

[3] Stores code 26 provides the best ballistic match for the Mk-58 MLM when carried as a single on ITER station 1. Refer to NWP 3-22.5-AV8B, Vol. II, Chapter 2 for additional details and delivery data.

4 Ballistics assume Mk-71 motor.

5 Ballistics assume Mk-4 motor.

6 Ballistics assume Mk-71 Mod 1 motor.

7 Ballistics assume Mk-4 motor.

8 Ballistics assume Mk-66 motor.

9 Weight of full MXU-648A/A EBC (used by VREST).

10 Weight of empty 300 gallon fuel tank.

11 Interference Drag: Intermediate ITER with one to three stores next to inboard ITER with one to three stores has interference drag index of 1.75 per ITER. Inboard/intermediate ITER with one to three stores next to anything but an ITER with one to three stores has no interference drag.

12 The drag of the adapter is included in the LAU-7A-5 launcher drag index.

GENERAL NOTES:

Blunt nose = M904 fuze, MXU-735 solid steel round nose plug, or open cavity (inert only).

Pointed nose = Mk-43 TDD or steel nose plug.

Use Mk-82 stores codes for BDU-45s. Use Mk-83 stores codes for inert Mk-83s.

LD - low drag

HD - high drag

IFS - in flight selectable

STD - standard (non-thermally protected)

TP - thermally protected

DST - destructor

Weapon Loadout Panel (A/G)

NOSE FUZE CODES	
0	None
1	Not authorized
2	Not assigned
3	M904E4 [1]
4	Mk 339 Mods
5	Mk 13 Mod 0
6	Not assigned
7	FMU-140/B
8	Mk 43 Mod 0 (electrical)
9	Mk 43 Mod 0 (mechanical)
10	Mk 32
11	Not assigned
12	Not assigned
13	Not assigned
14	Not assigned
15	Mechanical

NOTE:
[1] With nose fuze code 3 dialed into the SMC, the LOP will display "10-seconds" regardless of the actual fuze arming time set on the M904E4 fuze. The fuze will arm at the time set in the fuze.

TAIL FUZE CODES	
0	None
1	FMU-139
2	Not authorized
3	Mk 42
4	Mk 344 Mods
5	Mk 13 Mod O
6	Not assigned
7	Mk 346 Mod O
8	Mk 376 Mod O
9	Not authorized
10	Not assigned
11	Not assigned
12	Not assigned
13	Not assigned
14	Not assigned
15	Mechanical

Weapon Loadout Panel (A/G)

LUU-2 DIFFERENTIAL ALTITUDE CODES		LUU-2 QUANTITIES	
NOSE CODE	ALTITUDE	TAIL CODE	QUANTITY [1]
0	Not assigned	0	0
1	250	1	1
2	500	2	2
3	1000	3	3
4	1500	4	4
5	2000	5	5
6	3000	6	6
7	4000	7	7
8	5000	8	8
9	6000	9	9
10	7000	10	10
11	8000	11	11
12	9000	12	12
13	10000	13	13
14	11000	14	14
15	Not assigned	15	16

NOTES:
[1] Quantity of 15 cannot be specified.

FMU-140/B —NOSE FUZE			
TAIL CODE	HOF	TAIL CODE	HOF
1	300	6	1300
2	500	7	1800
3	700	8	2200
4	900	9	2600
5	1200	10	3000

NOTES:
Codes 0 and 11-15 are fuze faults.
Loadout (LOP) will display *** on DDI.

CONTINUED

Weapon Loadout Panel (A/G)

GUN CODE	ARMAMENT
Any numeral up to 30	Number of rounds (times 10) loaded in fuselage ammo pak.

ECM

PREFLIGHT

Refer to Weapon Loadout Panel (ECM) illustration for decoy dispenser load codes.

DECM

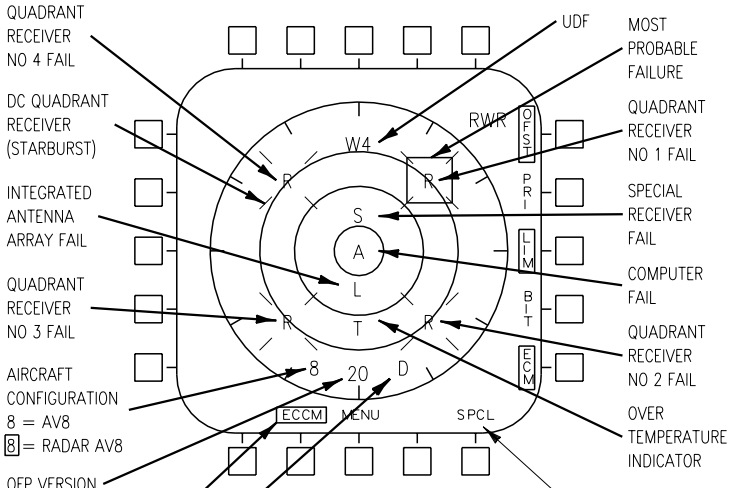
The items marked by an asterisk constitute the short bit. This bit procedure is permitted when time is limited. It will not identify failures of, or enable operation of, the 126-RWR blanking bus and interface. To the maximum extent possible, a complete interactive ALQ-164/ALR-67 BIT should be initiated.

ALQ-164*	- STBY	- CW NOGO/P NOGO for 3 minutes CW JAM for 4 seconds then off
ALQ-164*	- BIT	- CW NOGO/CW JAM flash CW NOGO out, CW JAM for 4 sec. PJAM flash 3 times then out 45 sec. PJAM on steady = bit complete
ALQ-164	- OFF	- for 1 minute
ALR-67	- BIT	- 126/162 on ECM page 2
ALQ-164	- STBY	- (as before)
ALQ-164	- BIT	- (as before)
ALR-67	- BIT	- (as before)
ALQ-164*	- RCV	- P NOGO on = 126 B power supply P NOGO flash = 126 B overtemp CW NOGO on = 162 mission degrade CW NOGO flash = 162 power supply CW JAM on = mission critical fail P JAM/CW JAM flash = receiving

ALE 39

Standard loadouts are presented for generic contingencies. Specific scenarios may require deviations.

RWR BIT Display



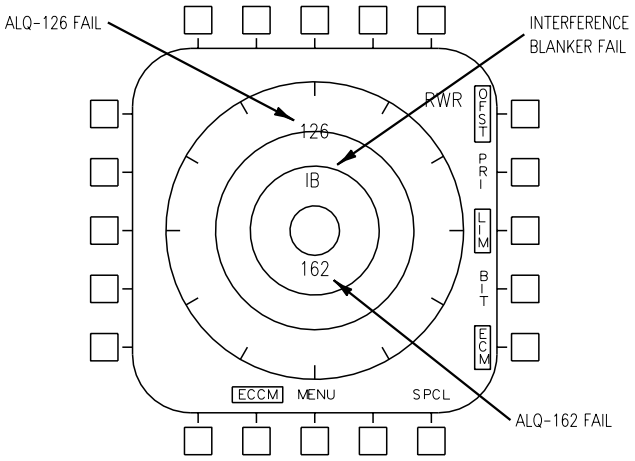
PAGE 1 WITH ECP-510

(EXPENDABLES AND STORES DATA OMITTED FOR CLARITY)

IF "SPCL" IS PRESSED WITHIN 1.5 SEC OF PRESSING "BIT", THE SPECIAL BIT PAGE WILL BE DISPLAYED.

AV8BB-TAC-30-(6-1)11-CATI

RWR BIT Display



PAGE 2

(EXPENDABLES AND STORES DATA OMITTED FOR CLARITY)

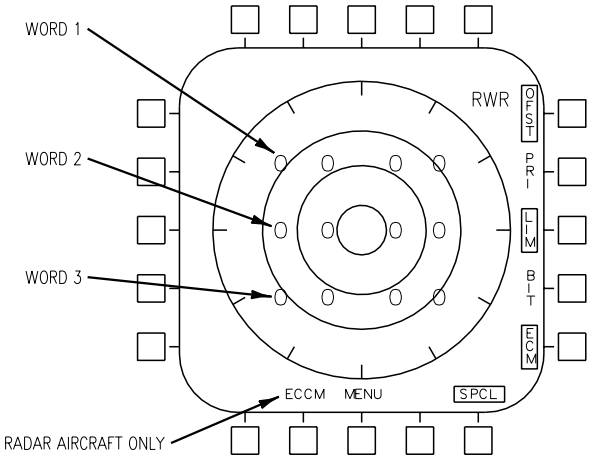
- NO DISPLAY IF NO FAIL
- DISPLAYED 1 SECOND FOR 1 FAIL PLUS 0.5 SECOND FOR EACH ADDITIONAL FAIL.
- THREAT LIGHTS OFF
- STATUS CHANGE TONE ON
- 126 = ALQ-126 PORTION OF DECM POD FAIL
- 126D = ALQ-126 DEGRADED
- IB = INTERFERENCE BLANKER FAIL SENSED BY RWR - NOT TO BE CONFUSED WITH IB ON THE AVIONIC BIT DISPLAY.
- 162 = ALQ-162 PORTION OF DECM POD FAIL
- 162B = BLANKING FAIL SENSED BY ALQ-162

NOTE

THE BIT OPTION BUTTON CAN BE SELECTED AT THIS POINT IF DESIRED. THE REMAINING DISPLAYS ONLY INDICATE THE DDI'S ABILITY TO DISPLAY ALL SYMBOLS.

AV8BB-TAC-30-(6-2)11-CATI

RWR BIT Display



SPECIAL BIT PAGE

(EXPENDABLES AND STORES DATA OMITTED FOR CLARITY)

SPECIAL BIT FAIL CODES

THE CONTENTS OF THREE BIT STATUS WORDS ARE DISPLAYED TO FORM THREE LINES OF HEXADECIMAL CHARACTERS. FOR EXAMPLE:

8	0	2	E
0	F	0	0
4	0	0	2

TO DETERMINE THE CAUSE OR TYPE OF FAILURE, REFER TO A1-AV8BB-760-100, WP 012 00, FIGURE 1.

BIT CODES

EQUIPMENT	FAILURE NUMERAL (WRA)	INDICATION TO PILOT
ACNIP	1	ACNIP WRA fail
ADC	1	Invalid air data parameter(s) removed from HUD
	2	AOA removed from HUD
	3	TAS not available for display on HUD when A/G selected
	4	Altitude removed from HUD
	5	Magnetic heading invalid
	6	Magnetic heading invalid
AWLS	1	AWLS receiver fail
BCN	1	Radar beacon R/T fail
CNIDC	1	CNI data converter fail
COMM 1	1	Radio 1 fail
	2	Radio 1 antenna system fail
COMM 2	1	Radio 2 fail
	2	Radio 2 antenna system fail
DC	1	DC 1 fail
	2	DC 2 fail
[1] DDI	1	DDI fail (fwd)
[1] DMT	1	DMT inoperable
DSS	1	Data storage set fail
	2	Incorrect DSU load
	M	DSS memory is full
	D	DSU failed checksum

EQUIPMENT	FAILURE NUMERAL (WRA)	INDICATION TO PILOT
3 DVMS	1 2	Digital map computer fail Digital memory unit fail
EMS	1	Engine monitoring unit fail
3 FLIR	1 2 4 3	FLIR electronics unit fail FLIR sensor fail FLIR power supply fail
GPS	1 2 3 4	GPS receiver fail GPS battery fail Velocity reasonableness test failure GPS data is invalid
HUD	1 2	Cockpit HUD fail Aft cockpit HUD fail
IFF	1 2 3	IFF R/T FAIL KIT-1A fail IFF antenna system fail
INS	1	Automatic reversion to AHRS mode
3 MPCD	1 3	Left MPCD fail (fwd) Right MPCD fail (fwd)
RALT	1	Radar altimeter R/T failed

EQUIPMENT	FAILURE NUMERAL (WRA)	INDICATION TO PILOT
4 RDR	1	Radar target data processor
	2	Transmitter
	3	Receiver/Exciter
	4	Computer power supply
	5	Antenna
	6	Antenna electronics
	7	Transmitter flow low (indicates low liquid coolant)
	8	Waveguide pressure low
	9	Weight-on-wheels/inflight disagree
RWR	1	RWR computer inoperable
	3	Special receiver inoperable
	4	Integrated antenna array inoperable
	9	Quadrant receiver at 315° inoperable
	10	Quadrant receiver at 225° inoperable
	11	Quadrant receiver at 135° inoperable
	12	Quadrant receiver at 45° inoperable

EQUIPMENT	FAILURE NUMERAL (WRA)	INDICATION TO PILOT
SAAHS	1	Invalid mode or function inoperable
	2	Loss of pitch, roll or yaw function
	3	Loss of coordinated turn function
	4	Loss of control stick steering or emergency disengage
	5	Loss of forward pitch stab aug in approach
	6	Loss of pitch stab aug
	7	Loss of forward pitch stab aug in approach
	8	Loss of roll stab aug
	9	Loss of roll stab aug
	10	Loss of rudder trim and yaw stab aug
	11	Loss of roll/yaw interconnect
	12	Loss of particular switch function, or SAAHS switches off during BIT
	13	Loss of auto pitch trim or manual trim input
	14	Loss of auto roll trim or manual trim input
	15	Forward lateral accelerometer fail
	16	[5] Forward lateral accelerometer or roll rate gyro fail Roll rate gyro fail [5] Static inverter or contactor fail

EQUIPMENT	FAILURE NUMERAL (WRA)	INDICATION TO PILOT
SMS	1	SMS computer fail
	2	Armament control panel fail
	3	Station 1 controller fail
	4	Station 2 controller fail
	5	Station 3 controller fail
	6	Station 4 controller fail
	7	Station 5 controller fail
	8	Station 6 controller fail
	9	Station 7 controller fail
	[3] 10	Aircraft wiring
[3] TACTS	1	AIS fail
TCN	1	Tacan R/T fail

NOTES:
[1] Day Attack Aircraft
[2] Deleted
[3] Radar/Night Attack Aircraft
[4] Radar Aircraft
[5] Flight Control Computer CP-1473/ASW-46(V)

Radar System BOA Codes

CODE	WRA
RTDP	Radar Target Data Processor
XMTR	Transmitter
RE	Receiver-Exciter
CPS	Computer Power Supply
ANT	Antenna
SERV	Antenna Servos
RBIT	Run IBIT

NOTE:
BOA is the acronym used for the B, O, and A options on the radar maintenance data display (MENU - BIT - MAINT - RDR). Selecting the B-option displays results of IBIT, selecting O-option displays results of ORT, and selecting A-option displays results of PBIT.