BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 11-2B-52 VOLUME 3

14 JUNE 2010

Flying Operations

B-52--OPERATIONS PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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RELEASABILITY: There are no releasability restrictions on this publication.

OPR: AFGSC/A3TO

Supersedes: AFI11-2B-52V3, 22 June 2005

Certified by: HQ USAF/A3O-A (Col Scott L. Dennis)

Pages: 61

This volume implements AFPD 11-2, *Aircraft Rules and Procedures;* AFPD 11-4, *Aviation Service;* and AFI 11-202V3, *General Flight Rules.* It applies to all B-52 units. This publication applies to Air Force Reserve Command (AFRC) units and members except for paragraphs **2.5.1**, **2.5.2**, and **A4.2**. This publication does not apply to the Air National Guard (ANG). MAJCOMs/DRUs/FOAs are to forward proposed MAJCOM/DRU/FOA-level supplements to this volume to HQ AFFSA/A3OF, through AFGSC/A3TV, for approval prior to publication IAW AFPD 11-2, paragraph 4.2. Copies of MAJCOM/DRU/FOA-level supplements, after approved and published, will be provided by the issuing MAJCOM/DRU/FOA to HQ AFFSA/A3OF, AFGSC/A3TV, and the user MAJCOM/DRU/FOA and AFRC offices of primary responsibility. Field units below MAJCOM/DRU/FOA level will forward copies of their supplements to this publication to their parent MAJCOM/DRU/FOA office of primary responsibility for post publication review. ***Note:*** The terms Direct Reporting Unit (DRU) and Field Operating Agency (FOA) as used in this paragraph refer only to those DRUs/FOAs that report directly to HQ USAF. When guidance in this instruction duplicates, changes or conflicts with already published information contained in other AFGSC documents, the material in this instruction takes precedence. Keep supplements current by complying with AFI 33-360, *Publications and Forms Management.* See paragraph **1.5** of this volume for guidance on submitting comments and suggesting improvements to this publication. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/gcss-af61a/afrims/afrims**.

SUMMARY OF CHANGES

Paragraphs have been renumbered where necessary to accommodate updates. Changes include: **Para 2.5.1** and **2.5.2** Mission lead added to list of responsible personnel. **Para 2.5.3** Adds requirement for qualified TSO to brief target study for actual releases and exercises **Para 2.5.3.1.1** Deleted requirement to fax information to the 99 RANSS for electronic scoring. **Para 2.5.4.1** Allows units to augment the aircrew mission briefing items in attachment 2. **Para 2.5.6** Requires Aircraft Commander to update the crew on significant weather and its impact on the mission. **Para 2.5.7.3** Directs use of unclassified ranges for surface-to-air missile rings when available and directs use of 5 nautical mile increments for simulated rings when actual ranges are unavailable. **Para 2.5.7.6** Advises that up-to-date flight planning software automatically update Chart Update Manual (CHUM). **Para 2.6** Adds direction on fuel conservation. **Para 3.1.1** Offset deleted from Anchor air refueling. **Para 3.3.4.2**. Added guidance allowing visual contour flight with mapping radar failure. **Para 3.3.4.3**. Added guidance for AMI low level flight with one processor inoperative. **Para 3.3.4.5** Clarifies guidance for low altitude training with the AHRS inoperative. **Para 3.4.2** Provides updated visual standards for NVG training. **Para 3.5.4** Extensive changes to formation. **Para 6.2.2.1** Added definition of attempted release for 1760 weapons. **Para 6.2.2.3** Clarifies definition of hung weapon. **Para 6.2.2.4** Clarifies definition of retained weapon. **Para 6.2.2.5** Added guidance on verification of weapons release.

This document has been changed to reflect the transfer of the bomber global strike mission from Air Combat Command (ACC) to Air Force Global Strike Command (AFGSC).

Chapter 1

INTRODUCTION

1.1. Aircrew Responsibility. In conjunction with other governing directives, this regulation prescribes procedures for B-52 aircraft under most circumstances, but it is not a substitute for sound judgment or common sense. Operations or procedures not specifically addressed may be accomplished if they enhance safe, effective mission accomplishment.

1.2. Deviations. Deviations from these procedures require specific approval by the MAJCOM/A3 unless an urgent requirement or an aircraft emergency dictates otherwise, in which case the pilot in command, or instructor, will take the appropriate action to safely recover the aircraft.

1.3. References. The primary references for B-52 operations are T.O. 1B-52H-1, T.O. 1B-52H-1-12, T.O. 1B-52H-1-13, T.O. 1B-52H-1-13-1, and other applicable T.O.s, ATP-56(B), *Air To Air Refueling,* the Electronic Combat (EC) Mission Guide, AFGSCI 10-707, *Electronic Attack Training and EMCON Procedures,* CJCSM 3212.02, *Performing Electronic Attack in the United States and Canada,* AFTTP 3-1.B-52, *Tactical Employment B-52,* AFI 11-214, *Air Operations Rules and Procedures,* and this instruction. A reference for techniques is AFTTP 3-3.B-52, *B-52 Combat Aircraft Fundamentals.*

1.4. Waivers. Forward waiver requests through NAF/OV to the HQ AFGSC/A3, or HQ AFRC/A3 for approval. Waivers, if approved, will be issued for a maximum of 1 year from the effective date. Information copies of approved waivers will be provided to the other numbered air force OPRs. Information copies will be provided IAW AFRC procedures.

1.5. Instruction Changes. Submit recommendations for change to this instruction on AF Form 847, *Recommendation for Change of Publication***,** through the NAF/OV to HQ AFGSC/A3TV. HQ USAF/A3/5 is the approval authority for changes to this instruction.

Chapter 2

MISSION PLANNING

2.1. Flight Manuals. Flight Surgeons and flying Crew Chiefs not issued flight manuals are personally responsible for maintaining adequate knowledge of emergency procedures. Refer to AFI 11-215, *USAF Flight Manuals Program*, for guidance regarding aircrew maintenance of required flight manuals.

2.2. Checklists. Each crewmember will have and refer to appropriate flight manual checklists during all ground and flight operations to ensure accomplishment of prescribed actions. When accomplishing boldface items or Critical Action Procedures (CAPs) from memory during an actual emergency, verbatim responses are not required; however, the steps must be accomplished in order and perform the directed actions of the checklist per the flight manual. Conditions permitting, complete remaining non-boldface items by reference to the flight manual checklist.

2.3. Local Aircrew Aids. Develop locally produced aircrew aids. As a minimum, include the following:

2.3.1. Briefing guides.

2.3.2. Weight and balance data for calculating local aircraft configurations.

2.3.3. Local radio channelization and airfield diagrams.

2.3.4. Impoundment and radio out procedures.

2.3.5. Recovery procedures with weapons onboard, jettison areas, and hot brake areas/procedures.

2.3.6. Divert/alternate and emergency airfield information including runway data, approximate course/distance/estimated time enroute (ETE)/altitude, coordinates, and fuel required.

2.3.7. Other information as deemed necessary by individual units, for example, stereo flight plans, turnaround procedures, local training areas, instrument preflight, and maintenance brevity codes.

2.4. Mission Planning Responsibility. Individual aircrews, unit operations, and intelligence functions jointly share responsibility for mission planning. Aircraft commanders are ultimately responsible for ensuring all mission planning materials are current and command guidance is followed.

2.5. Mission Planning Procedures. Accomplish sufficient flight planning to ensure safe mission accomplishment for all phases of flight. As a minimum, mission planning includes takeoff data, a winded flight plan, en route procedures, planned simulated/actual threats, target study/weapons delivery, air refueling, fuel requirements (amount and type), chart preparation for all crew positions, applicable Special Instructions (SPINS) and landing data. In addition, for night sorties planned with Night Vision Goggles (NVGs), review lunar illumination and elevation, anticipated ground light sources, and weather for the planned low level period. Prepare crew mission folders in accordance with AFGSCI 10-450 Vol 2, *Operations Nuclear*

Committed Aircraft Nuclear Planning, and MCR 55-125, *Preparation Of Mission Planning Materials.*

2.5.1. **(Does not apply to AFRC) Planning/Preparation Requirements:**

2.5.1.1. Units will maintain mission planning facilities where all information and materials required for flight planning are available. Maintain appropriate weather information and climatological data for flight planning. Aircraft modification status boards must be readily accessible.

2.5.1.2. Unit staff will provide flight crews sufficient time to accomplish crew mission planning and mission briefing. This period is normally 8 hours, but may be reduced in proportion to the planned sortie complexity and amount of staff and computer prepared mission data available to the crew. However, in no case will less than 2 hours be allocated to allow the crew to review mission data and complete an aircrew mission briefing. Mission planning must be accomplished as a crew. Unit staff will ensure other activities, such as recurring academic training, training device periods, additional duties, etc., do not interfere with time allotted for mission planning and aircrew mission briefing. The aircraft commander/flight lead/mission lead/mission commander is ultimately responsible for the proper conduct of mission planning and must ensure sufficient time and materials are available to effectively plan the sortie.

2.5.1.3. If unable to comply with the mission planning requirements of this chapter due to weather divert, the mission will not include low level. However, the crew may fly the same low level as the original mission if re-briefed and flown within 72 hours of the original brief.

2.5.1.4. Make crew substitutions with sufficient time for the substitute crewmember(s) to comply with paragraph 2.5.1.2. Substitutions require squadron TOP-3 or higher approval.

2.5.2. **(Does not apply to AFRC) Crew Mission Planning:**

2.5.2.1. All crewmembers must be present during mission planning unless specifically excused by the squadron operations officer or higher authority. The aircraft commander will direct detailed mission flight planning, including tactics, techniques, and procedures to employ. Review all crew and crewmember training requirements/currency and schedule outstanding items to the maximum extent possible. Review aircrew and aircraft restrictions for each activity planned. Plan an alternate mission/activity including activity in the event equipment failure or weather prevents accomplishing the primary mission.

2.5.2.2. The aircraft commander/flight lead/mission lead/mission commander is ultimately responsible for the accuracy and completeness of all mission data. The aircraft commander must ensure crew substitutions are made in time for the substitute crewmember(s) to be thoroughly briefed and familiar with the applicable mission data.

2.5.3. **Target Study.**

2.5.3.1. Target study familiarizes the crew with ingress/egress routing, en route threat locations and applicable tactics, detailed description of the target area, and procedures for weapon employment. Target study must be accomplished as an integral crew and under supervision of a unit designated Target Study Officer (TSO). Prior to giving target study,

TSOs must: certify IAW local procedures outlined in Chapter 8 and have current information on the routes and targets to be briefed. Tactics and threat review portions should be supervised by weapons and tactics and intelligence personnel, as available. Units may document completion of target study on AF Form 4037, OAS Briefing/Debriefing Analysis and Review. Target study by a qualified TSO is required for all actual weapons releases and exercises. All other simulated weapons activity will follow local Chapter 8 procedures for target study requirements.

2.5.3.2. **Route Study (Low Altitude Only):**

2.5.3.2.1. Crewmembers will review procedures for descent to low altitude, route altitude structure (Terrain Avoidance (TA) and Instrument Flight Rules (IFR)), navigator/pilot information blocks, obstructions, noise sensitive/avoidance areas, altimeter changeover points, special operating procedures/notes, low level abort procedures, and applicable CHUMs. Plan routing around any man-made obstacles at or above the planned flight altitude. They will also review conflicting low altitude route/airway crossing areas and all airports within or near low level route corridor. When scheduled through open Electronic Scoring Sites (ESS), crews should fax information to the applicable site.

2.5.3.2.2. The TSO will brief the primary and alternate TA calibration peak/area procedures, significant terrain, possible terrain masking opportunities for briefed threats, any changes for the last 30 days (noise complaints/avoidance areas, CHUMs, new operating procedures, etc.), and minimum safe altitude for the route. The TSO will also discuss location, description, acquisition ranges, and optimal tuning of en route fixpoints for equipment updates prior to the Initial Point (IP) of the bomb run.

2.5.3.3. **Weapons Employment:**

2.5.3.3.1. For the bomb run review, the TSO will place particular emphasis on identifying overall radar and visual patterns/pointer systems to aimpoints, optimum tuning techniques, IP, the target, and Bomb Release Line (BRL). Review the target description and radar/visual predictions of the target and/or aimpoints for more precise crosshair placement, especially if area terrain may cause radar return breakup and visually obscure the target. Also, provide visual timing points and photos (if available) to assist the pilot team during the run.

2.5.3.3.2. The TSO will discuss equipment characteristics/limitations/procedures, weapon impact intervals, stop release, train length, number and type weapons to be released. The TSO will also brief weapon release parameters including airspeed, altitude, and axis of attack, timing tolerance/frag deconfliction, and primary, alternate, and emergency bombing procedures. In addition, cover weapon preflight procedures, fuse settings, probability of damage required, altitude calibration points, and other pertinent data from the bomb form.

2.5.3.4. **Tactics and Threat Study.** Unit weapons and tactics and intelligence personnel will develop realistic threat scenarios for specific sortie profiles/low level routes the unit will fly each quarter. Brief threat location, type, and capabilities during target study. Crews will develop an Emissions Control (EMCON) plan (coordinated within the formation, as applicable) based on the threat scenario. Also, review applicable tactics to

defeat/degrade the threat while still effecting reliable weapon delivery. These scenarios should be changed often to maximize training.

2.5.4. **Aircrew Mission Briefing.** The aircraft commander will conduct an aircrew mission briefing for all missions. A crewmember excused from the briefing, or substituted following the briefing, must receive appropriate target study and a detailed briefing by the aircraft commander covering all requirements of paragraph 2.5.4.1. below.

2.5.4.1. The briefing includes all scheduled activities and required items in **Attachment 2** in order of accomplishment from takeoff through mission termination. Units may augment this guide as necessary. The aircraft commander must brief recovery base and planned alternate location, radio aids, approach lighting, runway markings and lights. Review procedures and crew coordination required to identify runway environment and transition from instrument to visual landing cues. Brief the descent, approach, and landing phase in sufficient detail that only a short review is required inflight during the pre-descent phase. Brief alternate mission activity.

2.5.5. **Formation Briefing.** The formation leader will conduct a briefing for all crewmembers in the formation covering the planned activities, procedures, techniques, specific EMCON procedures, and division of formation responsibilities. If planning lead changes, each formation lead should brief their portion of the mission. Formation briefing guides are in **Attachment 2** and units may augment these guides as necessary. Units flying missions not covered by this regulation or its supplements (for example, Operational Test and Evaluation (OT&E) weapons delivery profiles) will develop and maintain briefing guides for those missions as applicable. As a minimum, the briefing must include all applicable items listed in the guide. The formation leader must ensure all crewmembers in the formation thoroughly understand their responsibilities, to include assumption of formation leadership. Resolve any questions during the briefing. If aircraft depart from separate bases and rendezvous for formation activity, the formation leader will conduct a telephone briefing.

2.5.6. Pretakeoff Meeting. The aircraft commander/flight lead/mission commander will conduct a pretakeoff meeting in accordance with the procedures defined in the local Chapter 8 to this regulation. The aircraft commander/flight lead/mission commander will review with the crew any changes to the mission to ensure complete knowledge of all scheduled activity including changes to the arrival and approach procedures for the first destination. All crewmembers should attend the weather briefing. The aircraft commander is responsible for updating the crew on significant weather conditions and will review the impact on the mission with the crew.

2.5.6.1. If the interval from initial aircrew briefing to takeoff exceeds 72 hours, the aircraft commander/flight lead/mission commander must personally rebrief the entire flight mission again with the aircrew. This does not apply to off duty station training missions where the crew has planned and briefed to fly several missions in a 3-4 day period. For missions of this type, the crew will review the planned route to be flown during the pretakeoff meeting prior to each individual mission.

2.5.6.2. The aircraft commander's signature on the DD Form 175, *Military Flight Plan*, indicates all the items in the briefing guides were briefed/accomplished. Units filing electronically must designate alternative procedures in their local Chapter 8 for documenting briefing requirements.

2.5.7. Chart Preparation:

2.5.7.1. Prepare charts IAW T.O. 1B-52H-1 Section 4 and MCR 55-125. Refer to AFGSCI 10-450 Vol 2 for nuclear sorties.

2.5.7.2. Pilots, radar navigators, and navigators must use low level charts constructed on Tactical Pilotage Charts (TPC). Areas not covered by TPCs may be constructed on Operational Navigation Charts (ONC) or a suitable NIMA-approved replacement. Electronic Warfare Officers will be provided, as a minimum, a chart with expected threats, terrain features, and turn points.

2.5.7.3. For training purposes, use unclassified ranges for all simulated surface-to-air missile rings. If unavailable, use simulated surface-to-air missile, early warning/ controlled intercept site, and fighter intercept radius rings in 5 nautical mile (NM) increments (5 NM, 10 NM, 15 NM, etc.)

2.5.7.4. Obtain JN/ON charts to cover 200 NM either side of course and alternate bases.

2.5.7.5. When manually creating low level charts, update charts from the Chart Update Manual (CHUM) and annotate all noise sensitive areas along the route of flight. If using up-to-date flight planning software (PFPS), CHUM is automatically updated.

2.6. Fuel Conservation. Unit supervision/aircrew will manage aviation fuel as a limited commodity and precious resource. Fuel efficiency will be considered throughout all phases of mission planning and execution. Unit supervision/aircrew will design flight plans and routing for optimal fuel use. In-flight procedures such as climb/descent profiles and power settings will also be examined for efficient fuel usage.

Chapter 3

NORMAL OPERATING PROCEDURES

3.1. Air Refueling. Air to air refueling operations are authorized on an IFR flight plan and along published or special tracks/anchors. In addition, under certain circumstances, en route refueling may be conducted between aircraft comprising a formation. During these operations, it is the primary responsibility of the tanker aircrew to remain within the protected lateral, longitudinal, and vertical airspace. For the dimensions of protected airspace and other conditions/procedures affecting air refueling operations, refer to Federal Aviation Administration Handbook (FAAH) 7610.4, *Special Military Operations,* Chapter 10.

3.1.1. Fly anchor air refueling tracks, or tracks that require frequent turns, in a trail position stacked up 500 feet above base refueling altitude rather than echelon formation. When the lead bomber has completed air refueling, initially assume a left echelon position and descend to 1,500 feet below AR altitude. This will allow the lead bomber to transition to a 2-NM trail formation position for turns and provide 1,000 feet for a breakaway bomber to descend. If the completed bomber continues to stack down in trail position, they should be ready to deconflict with a breakaway bomber. The lead bomber should consider leaving the formation once their air refueling is complete if mission objectives permit. This will free up airspace and greatly reduce lead's workload.

3.1.2. **Military Assumes Responsibility for Separation of Aircraft (MARSA):**

3.1.2.1. MARSA between the tanker(s) and the receiver(s) begins when the lead tanker advises Air Route Traffic Control Center (ARTCC) they accept MARSA.

3.1.2.2. After MARSA has been declared, controller assigned course or altitude changes prior to rendezvous completion will automatically void MARSA. Once rendezvous is completed, headings and altitude assignments may be made with tanker concurrence and MARSA can remain in effect.

3.1.2.3. After rendezvous, the tanker will keep receiver(s) within 3 miles of the tanker until MARSA is terminated.

3.1.3. **Rendezvous:**

3.1.3.1. **Rendezvous Delta (Point Parallel).** Receiver aircraft shall arrive at the Rendezvous Control Point (RVCP) no earlier than the scheduled Rendezvous Control Time (RVCT) minus 5 minutes and depart no later than RVCT plus 10 minutes. If unable to meet timing tolerance, attempt to contact a unit scheduler/duty officer for a new rendezvous time. If unable to schedule a new rendezvous time, air refueling is permitted provided ARTCC clearance is received.

3.1.3.2. **Rendezvous Golf (Enroute, also buddy and on course).** Aircraft should arrive at the Rendezvous Point ± 5 minutes of the scheduled rendezvous time. If unable to meet timing tolerance, attempt to contact a unit scheduler/duty officer for a new rendezvous time. If unable to schedule a new rendezvous time, air refueling is permitted provided ARTCC clearance is received. ***Note:*** Aircrews must be aware arriving outside the +5/-10 minute window for point parallel rendezvous or the ± 5 minute window for enroute rendezvous may result in a conflict with other aircraft scheduled in the refueling airspace.

If a conflict arises between two formations, the formation within their timing tolerance will take precedence.

3.1.4. Visual Formation. Visual formation during air refueling is authorized IAW ATP-56 (B). Refer to T.O. 1B-52H-1 Section 2 for applicable procedures (referred to as observation position.)

3.2. Cruise.

3.2.1. **Authentication Procedures.** Crews will authenticate all directed mission changes, when applicable.

3.2.2. Sorties that remain within UHF contact of local command post are exempt from Emergency Action Message (EAM) and HF requirements.

3.2.3. BRNAV procedures and information.

3.2.3.1. Basic Area Navigation (BRNAV) Airspace. Airspace where BRNAV is applied is considered special qualification airspace. Both the operator and the specific aircraft type must be approved for operations in these areas. BRNAV navigation accuracy criteria is RNP-5. The B-52 complies with RNP-5 accuracy, integrity, and continuity and is approved for BRNAV operations requiring RNP-5 or higher criteria. Aircrew must update position as required to maintain actual centerline within +/- 5 NM of ATC cleared route.

3.2.3.1.1. Minimum equipment to operate in BRNAV airspace is one INU capable of updates from Doppler and/or Radar inputs (i.e., not tied to aircraft GPS). Flights entering BRNAV airspace after long over water flight must be especially aware of BRNAV tolerances and update accordingly. ***Note:*** The B-52 GPS receiver is not certified for BRNAV operations.

3.2.3.1.2. Minimum aircrew for BRNAV operations is a pilot, copilot, and radar navigator.

3.2.3.1.3. Aircraft must turn short of filed points to remain within +/- 5 NM of ATC cleared route. Aircrew should utilize the "Turn Short" feature when preparing mission data cartridges and during inflight operations.

3.2.3.1.4. Aircraft unable to maintain BRNAV tolerances must advise ATC immediately and take appropriate coordinated action.

3.2.3.1.5. Document (in the aircraft forms) malfunctions or failures of BRNAV required equipment, including the failure of this equipment to meet BRNAV tolerances.

3.3. Low Altitude Training. Conduct low altitude training in specifically approved mission employment areas. Mission employment areas are defined in **Attachment 1.**

3.3.1. **Communications:**

3.3.1.1. Prior to entering an IFR Military Training Route (IR), confirm with ARTCC the entry and exit fix time, the requested altitude after exiting, and if applicable, the number of reentries.

3.3.1.2. Refer to Flight Information Publication (FLIP) AP/1B, *Area Planning - Military Training Routes*, for communications procedures on VFR Routes (VRs).

3.3.1.3. During low level, monitor Flight Service Station (FSS) for Significant Meteorological Information (SIGMET) and Airmen Meteorological Information (AIRMET) advisories at all times except at reporting/monitoring points, on the bomb run, when in contact with ARTCC, or when inflight emergencies dictate otherwise.

3.3.1.4. **Communications Failure on an IR Route.** For most routes, FLIP AP/1B contains the communications failure altitude. This is the altitude to fly after route exit. When flying a route without a published communications failure altitude, file the communications failure altitude in the remarks section of the DD Form 175. Confirm this altitude with the controlling ARTCC prior to route entry.

3.3.2. **Weather Requirements:**

3.3.2.1. Prior to entering any mission employment area, crews will attempt contact with a Pilot to Metro Service (PMSV) station (or appropriate weather source) designated during the weather briefing. This contact should be as near to the area entry time as possible to ensure receipt of the latest significant weather information. Without updated in-flight weather information from any source, the decision to enter will be based on crew judgment, considering such factors as forecast weather, altimeter settings and "D" values, and observed weather. ***Note:*** The requirement to obtain updated weather information in flight may be waived at the aircrew's option for missions where low altitude training is within 1½ hours after takeoff.

3.3.2.2. Use all available information to evaluate the possibility of encountering mountain wave effects. If it appears mountain wave effects could be encountered, climb to Minimum Safe Altitude (MSA) or IFR altitude early enough to avoid the effects. If mountain wave effects are encountered at any altitude, abort the area.

3.3.2.3. Aircrews are prohibited from entering a mission employment area closed due to hazardous weather/flight conditions (thunderstorms, turbulence, large number of birds or numerous birdstrikes, etc.). Aircrew will abort the low level when notified of route closure if they have not passed the area of hazardous weather or flight conditions. If the aircrew is advised the route is closed after passing through the area of hazardous weather, the decision to continue or abort rests with the crew. Aircrews aborting a mission employment area due to hazardous weather or flight conditions will advise the home station WG/CP and provide a Pilot Report (PIREP) to the home weather unit.

3.3.2.4. **Icing.** Do not conduct low altitude flights in areas of forecast severe icing conditions or areas of reported moderate or severe icing conditions. If moderate or severe icing is encountered, abort the mission employment area.

3.3.2.5. **Turbulence.** Do not conduct low altitude flight in areas of forecast severe turbulence, forecast moderate or severe turbulence in mountain wave effect, or moderate or severe turbulence reported by military aircraft. If type aircraft (military or civilian) reporting moderate turbulence is unknown, contact appropriate ARTCC for advisory. If moderate or severe turbulence is encountered, abort the mission employment area.

3.3.2.6. **Wind Restrictions.** B-52 flight at TA contour altitude is prohibited in mountainous areas when winds at MSA/IFR altitude are 40 knots or greater. During TA operations, if winds exceed 40 knots in a mountainous area, climb to MSA/IFR altitude. When approaching a mountainous terrain area with winds over 40 knots, climb to MSA/IFR altitude early. TA flight is permissible with winds over 40 knots in a non-mountainous area provided AFI 11-202V3 *General Flight Rules*, "Wind and Sea State Restrictions for Ejection Seat Aircraft" are met. Use all available information (e.g., wind readouts, drift information, blowing dust, turbulence, cloud formations, etc.) to evaluate the possibility of encountering mountain wave effects. If it appears mountain wave effects could be encountered, climb to MSA/IFR altitude early enough to avoid the effects. If mountain wave effects are encountered at MSA/ IFR (i.e., lenticular clouds with high winds), abort the route.

3.3.2.7. **Visibility/Cloud Clearance Requirements.** Weather for TA operations on IR routes must be at or better than TA Visual Conditions. If TA Visual Conditions cannot be maintained, climb to MSA/IFR altitude as soon as practical prior to encountering IFR conditions. Weather conditions for operations on VR routes must be IAW FLIP AP/1B. If these weather conditions cannot be met, abort the route. For night operations, weather must meet the applicable day criteria. In addition, sufficient light and visibility must exist to recognize major changes in terrain elevations such as mountain peaks, ridge lines, valleys, and sloping terrain (NVGs may be used to satisfy visibility requirement).

3.3.3. **Negative Altitude Variations.** Aircrews will use altitude variations from PMSV (or compute using PMSV altimeter settings and D values) to determine which route segments are affected by excessive altitude variations. This information should be obtained as close as possible to the planned entry time. Crews unable to contact a PMSV station may enter using information from the preflight weather briefing.

3.3.3.1. If any of the following situations occur during Instrument Meteorological Conditions (IMC) or at night and the crew is unable to clear terrain visually, abort the route (NVGs may be used to clear terrain visually during night Visual Meteorological Conditions (VMC)):

3.3.3.1.1. The difference between aircraft pressure altitude as indicated with the most current altimeter setting and the Offensive Avionics System (OAS)/Absolute Altitude (HA) computed true altitude exceeds -400 feet. This can be measured directly by taking an altitude calibration (for example, a 2420 Mean Sea Level (MSL) pressure altimeter reading and a 2000 ft OAS/ HA value would yield a -420 ft altitude variation).

3.3.3.1.2. The aircraft radar altimeter indicates less than a 600 ft terrain crossing while at the MSA/IFR altitude.

3.3.3.1.3. Flying and maintaining TA clearance plane settings and the aircraft pressure altimeters indicate at or above the route IFR/MSA altitude.

3.3.3.2. When only the entry point area is forecast with excessive altitude variation, the crew may enter the route even with IMC conditions at the entry point. However, the crew cannot descend below 1000 feet above the IFR/MSA altitude for the Primary TA Initiation Point (PTAIP) unless VMC is encountered and can be maintained.

3.3.3.3. When latter portions of the low level route are forecast with excessive altitude variation and the entry point is within prescribed tolerances, crews may enter the route in IMC conditions and fly MSA/IFR altitude up to the area of excessive altitude variation. Prior to entering the area of excessive altitude variation, crews must be able to visually clear terrain in order to continue low level operations. Once the forecast/observed area(s) of excessive altitude variation is overflown, subsequent portions of the low level route may be flown. ***Note:*** Altitude variation tolerances are amended as shown for the following route segments:

3.3.3.3.1. IR-800, points F to T: -600.

3.3.3.3.2. IR-800, points AL to AX and AX to AS for racetrack routing: -600 feet.

3.3.3.3.3. IR-801, points A to AL: Unlimited.

3.3.4. **Equipment Restrictions.** If equipment problems impair the crew's ability to clear terrain do not attempt low level flight.

3.3.4.1. **Flight Controls.** Abort low level if any flight control system malfunction denies the pilot a safe margin of control over the aircraft.

3.3.4.2. **Mapping Radar Failure (Scope Blank or Inadequate for Navigation).** Do not fly low level, during day IMC or night, with mapping radar failure. Aircraft without mapping radar may penetrate to low altitude during daylight hours provided TA Visual Conditions can be maintained. Crews may fly visual contour flight with mapping radar failure. Abort the route if weather conditions fall below TA Visual Conditions at any time.

3.3.4.3. **OAS Processors.** Do not fly low level with less than one processor during night or in IMC. Crews may penetrate to low level and fly the route as long as day TA Visual Conditions can be maintained.

3.3.4.4. **Multi-Function Displays (MFDs).** Do not fly low level unless there is at least one operable MFD at the RN station and one at the navigator's station.

3.3.4.5. **Attitude Heading Reference System (AHRS).** Do not fly low level with a malfunctioning AHRS. Exception: The AHRS does not need to be fully operational if one Inertial Navigation Unit (INU) is providing accurate heading and there is accurate MD-1 gyro stabilization for the pilot's attitude director indicator (ADI) (this exception applies only for day, VMC low altitude training).

3.3.4.6. **Radar Altimeter.** TA or EVS/visual contour flight without a properly operating radar altimeter is prohibited.

3.3.4.7. **Additional Night Equipment Restrictions.** The following equipment must be fully operational for night TA operations, with or without NVGs:

3.3.4.7.1. Terrain avoidance system.

3.3.4.7.2. Doppler/INS. Either Doppler or INS ground speed and drift information may be used.

3.3.4.7.3. EVS. Either Steerable TV (STV) or Forward Looking Infrared (FLIR) must be operational for night TA operations.

3.3.4.7.4. Do not fly night TA if the aircraft performance is degraded; for example, engine out or main gear extended.

3.3.4.8. Do not practice radar silent operations in IMC or at night.

3.3.5. **TA Procedures:**

3.3.5.1. Crewmembers must use all means available to clear terrain, including EVS equipment. Sound crew judgment must be used to determine whether current conditions warrant TA flight. If there is any doubt, the crew should climb to IFR altitude immediately.

3.3.5.2. Descent from IFR altitude must be accomplished in TA Visual Conditions. The PTAIP, or Start TA Point, is not a mandatory start descent point. The OAS radar will be in full scan TA (Plan Position Indicator (PPI) display or Displaced Center Plan Position Indicator (DCPPI) display) for all descents to TA altitudes. Range marks will be displayed to the maximum extent possible (N/A day Visual Flight Rules (VFR)).

3.3.5.3. TA flying under a cloud deck can be extremely hazardous, particularly under conditions of rising terrain or decreasing ceiling. In this case, climb immediately to MSA/IFR altitude.

3.3.5.4. Visual contour flying is not authorized at night.

3.3.5.5. During TA or visual contour operations, aircrews are encouraged to deviate from centerline, within route corridor, for tactics training. Attempt to maintain route centerline when flying at IFR altitudes without visual terrain clearance. Crews are not authorized to deviate from published route corridor except when aborting the route. ***Note:*** If a conflict arises between the pilot's and navigator's information, climb to a safe altitude and resolve it; obtain further flight clearance if necessary. If differences are resolved resume scheduled training activity.

3.3.5.6. If aircraft position is unknown, immediately climb to MSA/IFR altitude. If position cannot be determined after climbing to MSA/IFR altitude or any time route corridor has been exceeded, abort the route.

3.3.5.7. Whenever bank angle exceeds 15°, the pilot flying the aircraft will make the turn visually or, if at night, initiate a climb to a safe altitude before executing the turn.

3.3.5.8. If the TA operational check is not completed by 30 NM prior to the Start Maneuver Area (SMA)/IP, discontinue the check and prepare for the bomb run. If either the Fuselage Reference Line (FRL) or Flight Vector Reference (FVR) compensation has been completed, TA procedures may be used. If not, revert to EVS/visual contour, conditions permitting, or the MSA/IFR altitude. This does not preclude system evaluation of a previous check within the 30 NM restriction.

3.3.5.9. Combat Altimeter Setting. During day TA operations aircrews are encouraged to determine, set and maintain true altitude in the aircraft pressure altimeters. Enter the route using the latest ARTCC/FSS altimeter, then determine an altimeter setting after passing the Start TA point. Reset aircraft pressure altimeters using current FSS information before entering IMC flight conditions or before any climb to IFR altitude.

3.3.5.10. Crews may omit the circled items of the Descent, After Descent, and TA Compensation checklist when weather conditions or time constraints prevent accomplishment of the comparison/ FRL compensation. During night mountainous conditions, crews will accomplish the entire checklist unless the TA set has been previously compensated.

3.3.5.11. Conduct low altitude ESS activity on a scheduled basis only. Unscheduled low altitude runs are prohibited. Unscheduled high altitude activity may be conducted provided such activity does not interfere with scheduled activity. Aircrews may request scoring racetrack (backside) activity when flying a scheduled re-entry.

3.3.5.12. Monitor ESS transmissions for Electronic Attack (EA) restrictions and question the site immediately if you do not understand the instructions. Do not jam signals in restricted bands. All threat signals will be considered when determining crew tactics. Practice realistic tactical scenarios throughout the EA/bomb run to the maximum extent possible.

3.3.6. **IR Route Timing Tolerances.** Crews will use the timing tolerances as specified in FLIP AP/1B. In the absence of specified requirements, aircrew will enter only at scheduled time plus or minus five minutes. If the scheduled entry cannot be made within the above tolerance, the use of subsequent primary or alternate entry points/times is authorized provided the aircrew has been so briefed and will maintain route timing.

3.3.7. **VR Route Procedures.** All flights on VRs will be conducted IAW AFI 11-202V3. If FLIP AP/1B weather minimums cannot be maintained, the aircraft will abort the route. Aircraft will enter VRs only at designated route points. Aircraft will exit only at designated route points unless weather conditions or an emergency situation dictates otherwise.

3.3.8. If ARTCC issues instructions that cause the aircraft to deviate outside the route width or altitude structure (IRs or VRs), the aircrew may continue the mission provided the following conditions are met:

3.3.8.1. ARTCC controllers can assure positive radar surveillance until the aircraft is established back in the route structure.

3.3.8.2. Mission timing tolerance can be met at the next low level navigation point.

3.3.9. **Abort Procedures.** Crews aborting low level, will obtain clearance from ARTCC prior to departing the low level unless a safety of flight condition (turbulence, thunderstorms, equipment malfunctions, etc.) exists which necessitates an immediate climb or turn. If aborting without a clearance, climb to a safe altitude on a course which will avoid airways and Class A, B, C, and D controlled airspace to the maximum extent possible. In addition, aircrew aborting without a clearance will place the Identification Friend or Foe (IFF) to emergency setting, report the emergency and flight plan deviation as soon as possible and obtain a new clearance. ***Note:*** FAR 91.123 states that no pilot may deviate from an ARTCC clearance, except in an emergency unless he or she obtains an amended clearance.

3.4. NVG Procedures. NVGs enhance the capability to fly low level. Crews will fly the TA trace and use their normal instrument cross-check to maintain prescribed altitudes. High level, NVGs assist the pilots with threat identification (ID) and avoidance, as well as formation station keeping. Do not use NVGs for air refueling or pattern operations.

3.4.1. TA Visual Conditions are required when conducting low level operations with NVGs. This will ensure adequate illumination for proper NVG operation. If conditions of reduced visibility are encountered while wearing NVGs, use extreme caution as weather phenomena (e.g., fog, clouds, etc.) are difficult to perceive with NVGs until after penetrating the weather.

3.4.2. Individuals are cleared for NVG training after a successful flight physical according to their AFSC IAW AFI 48-123, *Medical Examinations and Standards.*

3.4.3. Optimum operation with NVGs requires at least one-quarter moon at 30 degrees or higher elevation. NVG training may be conducted under less than optimum conditions, but normal night weather and visibility restrictions still apply for low altitude operations.

3.4.4. Determine in advance specific crew duties and procedures for aircraft emergencies, inadvertent weather penetration, and the threat environment. Plan and brief details such as who will fly the aircraft, who will transition from NVGs, who will perform emergency actions, what maneuvers will be flown, cockpit lighting, etc.

3.4.5. Each crewmember whose duties require the use of NVGs will adjust and calibrate their respective NVG device on an approved NVG calibration lane or NVG tester prior to use.

3.4.6. Generally, all crewmembers requiring NVGs should be on or off goggles at the same time. Items such as terrain or weather which are obvious to a pilot on NVGs may not be visible to a non-NVG pilot. These differences in visual capabilities can cause problems in communicating information within the cockpit. For the same reasons, mixing different types of NVGs (AN/AVS-9 with AN/AVS-6, AN/AVS-6 with AN/PVS-5, etc.) within the cockpit is not recommended.

3.4.7. The aircraft commander will ensure sufficient operable sets are aboard the aircraft. Each crewmember whose duties require using NVGs will be current and qualified with the NVG, unless accompanied by a current and qualified instructor.

3.4.8. If possible, begin donning the NVG and associated equipment approximately 45 minutes prior to descent to low level or 45 minutes prior to the threat area for high altitude missions. During low level missions, terminate NVG operations when the mission dictates and adjust cockpit lighting to a suitable level to allow for safe instrument flight.

3.4.9. The pilot flying the aircraft will use TA procedures, radar altimeter, and visual inputs gained from the NVG to maintain the proper terrain clearance. NVGs will not be used for visual contour low level or visual formation.

3.4.10. If NVGs fail and sufficient lighting is not available, climb to a safe altitude. Resume NVG/ TA operation only if sufficient light becomes available.

3.4.11. If any doubt exists concerning terrain clearance or visibility, immediately climb to a MSA/ IFR.

3.4.12. **Cockpit Lighting.** AFTTP 3-3.B52 will be used as the baseline for proper NVG cockpit setup. Units may supplement this information. Approved lighting systems include the indigenous NVG cockpit lighting (C+ modification), cyalume light sticks, and an approved battery powered LED light bar. Always carry cyalume lights sticks as a backup as they remain the most reliable means of cockpit lighting. In no case will NVGs be used without one of the cockpit lighting systems mentioned above.

3.5. Formation:

3.5.1. **Concept.** Maintain formations to provide mutual support provided it does not unduly interfere with mission accomplishment.

3.5.2. **Safety.** Formation is a potentially hazardous operation. Strict compliance with the specified procedures is essential to the safe conduct of any mission. These procedures, however, cannot substitute for proper aircrew judgment during fluid formation operations.

3.5.3. **Definitions:**

3.5.3.1. **Formation Flight.** Formation flight by FAA definition is more than one aircraft which, by prior arrangement between the aircrews, operate as a single aircraft with regard to navigation and position reporting. Separation between aircraft within the formation is the responsibility of the flight leader and the crewmembers of other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during join-up and breakaway. For descriptions of authorized B-52 formations, refer to AFTTP 3-3.B52.

3.5.3.2. **Standard Formation.** One in which each wingman maintains a proximity of no more than 1 mile laterally or longitudinally and within 100 feet vertically from the flight leader.

3.5.3.3. **Nonstandard Formation.** Those operating under any of the following conditions (B-52s typically fly this type formation):

3.5.3.3.1. When the flight leader has requested and ARTCC has approved other than standard formation dimensions.

3.5.3.3.2. When operating within an authorized altitude reservation (ALTRV) or under the provisions of a letter of agreement.

3.5.3.3.3. When operations are conducted in airspace specifically designed for special activity.

3.5.3.3.4. The formation leader shall notify ARTCC upon initial contact that the formation operations are being conducted in a nonstandard formation, and if required, advise ARTCC of the separation and spacing being employed (FAAH 7610.4).

3.5.3.4. **Formation Departure.** A formation departure is the departure of multiple aircraft at intervals of 1 minute or less which, by prior arrangement between the aircrews, operate as a single aircraft with regard to navigation and position reporting. The departure portion of the flight may terminate at a preplanned breakup point, which may be located up to, but not beyond, the planned initial level off at cruise altitude. Formation requirements of **para 3.5.3.1** apply.

3.5.3.5. **Enroute Formation.** An en route formation is two or more aircraft with the same intended route of flight, maintaining station-keeping operations by either visual and/or electronic means. Formation flight requirements of **para 3.5.3.1** apply.

3.5.3.5.1. When flying nonstandard formation, advise ARTCC of the longitudinal, lateral, and/or vertical separation between flight lead and the last aircraft in formation so they can provide appropriate separation from other aircraft.

3.5.3.5.2. Should separation between the flight leader and any other aircraft in the formation exceed ARTCC separation limitations or vary significantly from that reported to ARTCC for the nonstandard formation, the aircraft outside the formation limits will no longer be considered part of the formation. The pilot will inform the leader of his or her position and request ARTCC provide individual control until reestablished in formation.

3.5.3.6. **Stream Formation.** A stream formation flight is defined as two or more aircraft (or flights of aircraft) operating along the same intended route of flight as individual aircraft with regard to navigation and position reporting. Separation between consecutive aircraft or flights should not be less than 30 seconds nor more than 3 minutes longitudinally and 3,000 feet vertically. Stream formation, as flown by B-52s, is "nonstandard" by FAA definition.

3.5.4. **Responsibilities.**

3.5.4.1. **Flight Lead**. Only aircraft commanders who are certified to be flight lead IAW AFI 11-2B-52V1, *B-52--Aircrew Training*, may be flight lead, unless under IP supervision. The IP may supervise an uncertified aircraft commander from a wingman position. This does not prohibit an uncertified wingman from temporarily assuming flight lead duties for training or tactical considerations (i.e., equipment malfunctions).

3.5.4.1.1. The qualified flight lead is ultimately responsible for safe and effective mission accomplishment, regardless of their position in the formation in flight.

3.5.4.1.2. Flight lead will brief all aspects of the mission per AFTTP 3-3.B-52 and ensure all flight members have a clear understanding of the mission prior to flight.

3.5.4.2. **Wingmen.** Wingmen will execute flight lead's plan and adhere to the briefed standards. Additionally, they will assist as required to enhance flight lead's situational awareness with any information that may impact flight lead's decision making, and they will be prepared to take the lead and execute flight lead's plan, when directed.

3.5.4.3. **Units.** Units will adhere to formation standards defined in AFTTP 3-3.B-52, and may supplement formation standards using chapter 8 to this instruction based on mission requirements. Units will designate the most qualified aircraft commanders as flight leads for operational missions.

3.5.5. **Call Signs.** To preclude confusion by ARTCC, if aircraft positions within a flight are changed, do not change the flight call sign or IFF squawk. However, change the position numbers within the flight to the ones assumed.

3.5.6. **EMCON.** Practice EMCON to the maximum extent possible during peacetime in preparation for combat operations. Do not sacrifice safety in an effort to adhere to EMCON procedures. Refer to AFTTP 3-1.B-52, AFI 11-214, *Air Operations Rules and Procedures*, T.O. 1-B-52H-1, or ATP-56(B) for EMCON levels.

3.5.7. **Formation Takeoff.** Takeoff interval is no less than 30 seconds for conventional and nuclear operations. For "Buddy" refueling formation departures, the receivers usually roll first, followed by the tankers in that element. Takeoff intervals or sequence may be varied as necessary depending on aircraft acceleration and performance, training requirements,

weather, airfield conditions, and mission requirements. Make an abort call anytime the takeoff is aborted.

3.5.7.1. Do not conduct Quick Taxi/EWO Departure Exercises (as defined in AFI 11-2B-52 V1*)* with nuclear weapons loaded aboard the aircraft or with aircraft gross weights in excess of 450,000 pounds.

3.5.7.2. **Quick Taxi/EWO Departure Taxi Procedures.** Units will establish taxi plans from the normal parking area to each runway. Follow the taxi sequence established in the formation briefing (or free flow if briefed), to ensure proper launch sequence. Flight lead will confirm takeoff data computations, accomplish guard receiver check, and copy ARTCC clearance in the chocks. When possible, crews should start engines, taxi, and launch without interruption. If for any reason takeoff clearance is canceled after the aircraft are rolling, aircraft short of the runway will not cross the hold-short line. Following aircraft will set or adjust power as necessary to maintain proper spacing and a safe speed during taxi and alignment for takeoff roll.

3.5.8. **Departure:**

3.5.8.1. Fly formation departures according to unit developed formation routing, published instrument departure procedures, and the provisions of any existing letters of agreement between the local unit and ARTCC facilities. During departure and climb, use all available means (radar, EW receivers, visual and radios) to maintain safe aircraft separation and effect join-up. If safe separation cannot be established by visual, radar or radio contact, accomplish lost wingman or locally developed abort procedures. Carefully monitor altitude separation during rejoin. During IMC or when visual contact is lost, each aircraft in the flight will make periodic altitude calls, a minimum of every 5,000 feet, to ensure safe separation. Maintain formation integrity during any cutoff maneuvering (i.e. number three will close on number two, etc.). Subsequent closing aircraft (numbers three, four, five, etc.) will monitor lead's relative position. Lead must monitor the formation using all available means during departure/join-up and be prepared to assist wingmen having trouble locating lead.

3.5.8.2. **Formation Closure/Join-up**. Aircrews must safely apply procedures in AFTTP 3-3.B-52 when accomplishing formation closure and join-up procedures through constant awareness of closure rate approaching formation position.

3.5.9. **Aborts.** Aborting aircraft will clear the planned launch stream and take appropriate actions dictated by the reason for abort. Advise flight lead of abort. Flight lead should attempt to assist the aborting aircraft in any way possible. If the mission allows, flight lead may designate an escort. Aborting aircraft will obtain ARTCC clearance prior to altering their route or declare an emergency and deviate as necessary, whichever is appropriate.

3.5.10. **Level Off.** Flight lead must initially maintain a briefed airspeed to level off to allow formation closure. Adjust to cruise airspeed at briefed action point. B-52 aircraft normally fly non-standard formation. For non-standard formations, obtain an altitude block for all intermediate and final level off altitudes (normally a 1,000 foot altitude block for a formation of three aircraft). Block altitudes must provide a minimum of 500 feet altitude separation between aircraft in non-standard formation. Upon reaching an intermediate level off altitude, aircraft should "stack down" at 500 foot intervals and close to en route formation spacing.

All aircraft will normally stack up at final level off. Direction of stacking will be as required by mission tactics and as briefed by flight lead. If ARTCC will not approve a block altitude, request IFR separation or hard IFR altitudes for each aircraft in formation. ***Note:*** The technique of maintaining 250 feet above or below a single altitude assigned to two aircraft in formation is a direct violation of FAR part 91.175(a.). This technique is not acceptable and will not be practiced or used.

3.5.11. **Enroute Formation:**

3.5.11.1. AFTTP 3-3.B-52 describes authorized enroute formation positions. When visual conditions permit, minimize radio transmissions; heading and airspeed changes need not be announced.

3.5.11.2. Airspeed and Altitude. Plan the mission to consider the airspeed requirements of the highest or heaviest aircraft, whichever is more restrictive.

3.5.12. **Midmission Join-ups.** A midmission join-up should provide a sufficient straight leg beyond the planned rendezvous point to effect join-up. Use the following generalized procedures for scheduled or unscheduled midmission join-ups.

3.5.12.1. On Course. Arrive over a common navigational control point and then depart on a common leg. Flight lead should cross the rendezvous point, followed by the joining wingmen with at least 1,000 feet of altitude separation. As each aircraft crosses the rendezvous point, the aircrew may call airspeed, altitude, and heading over UHF interplane frequency, if deemed necessary. Once contact is established and verified, flight lead will clear the wingmen to close to en route formation and effect altitude changes as required. ARTCC radar assistance may be used, if necessary, to provide initial positioning.

3.5.12.2. Point Parallel. Reference procedures outlined in ATP-56(B) (RV-D) and technical orders. Maintain a minimum of 1,000 feet altitude separation between aircraft/formations during the rendezvous.

3.5.13. **Position Changes.** Changes in formation position may be required for the purpose of changing lead or moving wingmen with inoperative radar to a position where following aircraft can monitor their position. Prior to executing any position change, flight lead must ensure all formation members understand the procedures to be used. Cover position change procedures in the formation briefing.

3.5.13.1. Altitude is the most critical element during position changes. Make altitude changes only when assured of lateral spacing, or when coordinated on interplane frequency.

3.5.13.2. Once initiated, position changes take priority over all other activities. Prior to initiating a position change, flight lead will ensure sufficient straight and level time and airspace is available to complete the change. Maintain radar or visual contact throughout the position change. If radar and visual contact are lost during a position change, maintain altitude, advise flight lead that contact is lost, and attempt to reestablish contact by all available means. Do not attempt to rejoin the formation until establishing positive radar or visual contact. The last aircraft in formation with operable radar will monitor the position of other aircraft to ensure proper separation.

3.5.13.3. Aircraft that have changed positions will assume the call sign of their new position and flight lead duties (if appropriate). The new flight lead will check the formation in and all aircraft will acknowledge with their new call sign. The new lead aircraft will use flight lead's call sign for ARTCC communication and assume the current mode-3 squawk for the formation, unless otherwise briefed or directed by the controlling agency.

3.5.13.4. **VMC.** The following procedure is normally used to effect an aircraft lead or position change with other aircraft during VMC. Prebrief or coordinate on interplane frequency all changes in heading, position, and altitude.

3.5.13.4.1. Wingmen will maintain a minimum 1/2 mile in trail and maintain 500 feet altitude separation. The aircraft to assume the lead will move laterally to the right approximately 1/2 mile. Use 15 degrees of bank to turn 15 degrees from heading then turn back to heading using 15 degrees of bank. The wingman will accelerate and pass flight lead on the right (maintain 1/2 mile lateral separation).

3.5.13.4.2. As the wingman passes flight lead, flight lead will pass the lead to the wingman. The new flight lead will check the formation in, assume flight lead responsibilities, and climb or descend to base altitude after positive visual separation is confirmed.

3.5.13.4.3. The new wingman (old flight lead) will obtain 500 feet altitude separation, place IFF to standby, notify the new flight lead when approaching position in trail, and confirm altitude. Then the new flight lead will decelerate to briefed airspeed.

3.5.13.4.4. The wingmen will assume trail or tactical position behind flight lead and make a normal closure to proper position.

3.5.13.5. **IMC.** Use the following procedure to effect a position change in IMC conditions. The following procedure is to move any aircraft to lead. However, the procedure can be modified to accomplish a change to the end of the formation. Use the same bank, heading and airspeed changes, but stabilize ¾ NM aft of the last aircraft when moving to the end of the formation, before returning to the trail position.

3.5.13.5.1. Flight lead determines the maneuvering aircraft. The maneuvering aircraft will echelon (normally right) using 30° of bank and turning 30° from formation heading. When 30° off heading, reverse the turn and return to the formation heading. This should provide an approximate two nautical mile offset.

3.5.13.5.2. After established in echelon, the maneuvering aircraft will accelerate approximately 15 KIAS (airspeed may be increased if required). The maneuvering aircraft should stabilize on formation airspeed at approximately 1¼ NM forward range from the original lead. After stabilizing in the forward echelon position and visual or electronic contact is established, flight lead will direct an altitude change then pass the lead to the wingman.

3.5.13.5.3. The new flight lead will check the formation in and assume flight lead responsibilities, then move into the lead position using no more than a 15° heading change.

3.5.14. **Radar Failure.** Flight lead will provide guidance if an aircraft experiences radar failure resulting in difficulty in navigation or maintaining position.

3.5.14.1. During visual conditions, maintain formation position by visual/EVS means and notify flight lead if you anticipate instrument conditions.

3.5.14.2. During instrument conditions, maintain position using trailing aircraft radar to assist in spacing. If conditions warrant, make a position change to put the aircraft with radar failure in front of an aircraft with operating radar. Position two is optimum for radar-out aircraft in a three-ship formation.

3.5.14.2.1. If flight lead experiences radar failure they may maintain position, but pass responsibility for formation navigation to the number two aircraft.

3.5.14.2.2. Upon notification from a wingman of radar failure, flight lead should immediately announce formation heading, airspeed, and altitude. Flight lead will maintain a stable platform on the announced heading, airspeed, and altitude until the situation is under control.

3.5.15. **Lost Wingman Procedures.** Use these procedures when visual and radar contact are lost and positive separation cannot be assured. In any lost wingman situation, immediate separation of aircraft is essential to maintain safety. Upon losing sight of and radar contact with flight lead, or if unable to maintain formation due to disorientation, the wingman will simultaneously execute the applicable lost wingman procedure, transition to instruments, and notify flight lead. Use a bank angle equal to the number of degrees to turn to achieve separation. Smooth application of control inputs is imperative to minimize the effects of spatial disorientation. Any aircraft, which can maintain visual and/or radar contact with an aircraft executing a lost wingman maneuver, will remain in formation with that aircraft until otherwise directed by flight lead. When flight lead is notified by a lost wingman, they will take appropriate action as the situation dictates until assuring positive separation. Flight lead will establish a reference heading and altitude after initial separation is assured. During recovery, if the flight has a block altitude clearance, wingmen should establish appropriate altitude separation.

3.5.15.1. **Two-Aircraft Flights:**

3.5.15.1.1. In wings level flight (climbing, descending, or level) simultaneously transition to instruments, inform flight lead, turn 15 degrees away and maintain new heading for 15 seconds, then resume course. Return to formation or obtain separate clearance if required.

3.5.15.1.2. On the outside of the turn, transition to instruments, roll to wings level, and inform flight lead. Continue straight ahead to ensure separation prior to resuming turn. Return to formation if able or obtain separate clearance as required.

3.5.15.1.3. On the inside of the turn, simultaneously transition to instruments and maintain established bank angle, reduce airspeed by 10 KIAS to ensure clearance, and inform flight lead. Flight lead will simultaneously roll wings level, maintain airspeed, and acknowledge the wingman's call. If flight lead has acknowledged the lost wingman call and confirms lead aircraft is wings level, the wingman will, after 15 seconds, roll wings level, establish 500 feet altitude separation, turn to lead's

referenced heading and attempt to acquire flight lead on radar. If flight lead does not acknowledge, the wingman will maintain established bank angle, establish 500 feet altitude separation and roll out on a new heading. Attempt to acquire flight lead on radar and form into enroute formation position. If radar contact cannot be reestablished, obtain separate clearance from the controlling agency.

3.5.15.2. **Three-Aircraft Flights.** If only one aircraft in the flight is separated, the procedures listed above will provide safe separation. However, as it is impossible for number three to immediately ascertain if number two still has visual or radar contact with flight lead, it is imperative that number three's initial action be based on the assumption that number two is also separated. Number two will maintain position if in visual or radar contact. If number two goes lost wingman, follow the procedures outlined above; number three will follow the procedures listed below:

3.5.15.2.1. In wings level flight (climbing, descending, or level) simultaneously transition to instruments, inform flight lead, turn 30 degrees away, maintain new heading for 30 seconds, then resume course. Adjust to formation or obtain separate clearance as required.

3.5.15.2.2. On the outside of the turn, simultaneously transition to instruments, inform flight lead and reverse direction of turn for 15 seconds to ensure separation from flight lead and number two. Adjust to formation or obtain separate clearance as required.

3.5.15.2.3. On the inside of the turn, simultaneously transition to instruments and maintain established bank angle, reduce airspeed by 20 KIAS to ensure clearance, and inform flight lead. Flight lead will simultaneously roll wings level, maintain airspeed and acknowledge the wingman's call. If flight lead acknowledges the lost wingman call and confirms wings level, establish 1,000 feet altitude separation, turn to flight lead's referenced heading, and attempt to acquire flight lead and number two on radar. If flight lead does not acknowledge loss of visual contact, maintain established bank angle, establish 1,000 feet altitude separation, roll out on new heading, attempt to acquire flight lead on radar, and form into en route formation position. If radar contact is not reestablished, obtain separate clearance from the controlling agency.

3.5.15.3. **All Aircraft.** At night, after establishing positive separation, all aircraft will display anti-collision and position lights to aid in reestablishing contact, if applicable.

3.5.16. **Air Refueling/Echelon Formation:**

3.5.16.1. Adhere to echelon formation procedures as defined in T.O. 1B-52H-1 and ATP-56(B). Maintain proper echelon spacing and angle using radar and/or visual means.

3.5.16.2. Turns greater than 30 degrees into the echelon are permitted only in an emergency. Turns into an echelon should not exceed 15 degrees of bank. All aircraft must execute the turn at the same time, or when time permits, start with the last aircraft, then the next to last aircraft, etc. If turns greater than 30 degrees are necessary for mission requirements, flight lead should direct all succeeding aircraft to trail formation.

3.5.17. **Low Level Formation.** Weather, tactical considerations, and mission objectives will dictate the degree and type of electronic emission and the extent of radio communications.

When conducting low altitude training (LOWAT), formations may fly fighting wing/wedge or trail formation under day/VMC conditions only. For other than day/VMC, and for low level stream formation at TA altitudes, adhere to spacing criteria below.

3.5.17.1. **Prior to Descent to Low Level.** Normally obtain low level en route spacing, with ARTCC clearance, at high altitude prior to the entry point. The point to obtain spacing should be far enough from low level entry to ensure normal ARTCC notification and allow aircrews time to stabilize in position. Additionally, this point should be identified at the formation briefing. If not obtained prior to entry, spacing for the low level route may be acquired after all aircraft have entered the route structure by using airspeed differential or "S" turns within the corridor at the aircrew's discretion.

3.5.17.2. **Degraded Aircraft Performance Spacing.** If any aircraft has degraded performance (gear down, air refueling door open, etc.) to the extent they cannot meet formation time tolerances, but can meet published SMA time tolerances, place that aircraft at the end of the formation before low level entry. There can be no more than one degraded aircraft per low level formation if you anticipate or encounter instrument conditions.

3.5.17.3. **Descent.** Flight lead will discuss descent procedures, tactics, and airspeeds in the formation brief to ensure deconfliction.

3.5.17.4. **Low Level En route.**

3.5.17.4.1. **Spacing.** Maintain low level en route spacing by precise time control at each low level action point. Reference AFTTP 3-3.B-52 for specific procedures.

3.5.17.4.2. **Altitude.** All aircraft should plan to fly the same altitude schedule (TA or MSA/IFR altitude) during low level formation operations. Flight lead will direct formation to climb to MSA/IFR altitude prior to entering instrument conditions. **Note:** Flight lead will inform all aircraft in the formation of any significant low level weather change prior to descent into the route. If the formation will transition from high altitude visual conditions to low level instrument conditions, all aircraft will ensure a means exists to ensure safe aircraft separation prior to descending. If in instrument conditions, all aircraft will level off and fly MSA/IFR altitudes and maintain briefed timing separation for spacing.

3.5.17.4.3. **Airspeed.** Control airspeed to meet low level action points within briefed timing tolerances. Bomb run airspeeds will ensure TOTs and weapons release parameters are met.

3.5.17.4.4. **Navigation:**

3.5.17.4.4.1. If visual, maximize EMCON procedures. Each aircraft will fly autonomously and need not be in trail of preceding aircraft. Terrain masking ground track may be different for each aircraft within the formation. Each crew must be constantly aware of the position of all other aircraft in the formation. Maintain appropriate spacing.

3.5.17.4.4.2. Before flight, flight lead must brief en route threats, tactical considerations, update points, terrain masking plan, EMCON procedures, and visual or instrument procedures. **Note:** If conducting tactical maneuver training

during en route navigation, it should take place in all aircraft. Turns of, or in excess of 90 degrees heading change offer the potential for spacing conflicts when flight lead masks to the outside of a turn point and following aircraft masks to the inside. All aircraft must work from the same tactical scenario. Additionally, all aircraft should maneuver in response to threat signal activity.

3.5.17.5. **Abort Procedures.** Refer to paragraph **3.3.9** for additional procedures.

3.5.17.5.1. **Individual Aircraft.** If an individual aircraft aborts during low level, immediately notify the formation and follow appropriate procedures. All aircraft in the formation will place radars and air-to-air TACAN to operate/on. The aborting aircraft will clear the formation and notify them of intentions. Aborting aircraft have priority over all other activity.

3.5.17.5.2. **Aborting as a Formation.** If the entire formation must abort the low level route, follow appropriate procedures as defined in AFTTP 3-3.B-52. Additionally, all aircraft will immediately establish radio contact while placing appropriate radars and air-to-air TACAN to operate/on. Flight lead will direct altitude separation, headings, and airspeeds. Establish positive radar and/or visual contact before the formation performs any climbing maneuver other than to establish immediate altitude separation and maintain a safe terrain clearance. Establish abort routing, altitude, and procedures during the formation briefing.

3.5.17.5.3. In instrument conditions, if an aircraft cannot assure positive separation from other aircraft or is unable to maintain formation, immediately initiate a climb out of the low level route and follow lost wingman procedures.

3.5.18. **Battle Damage Checks.** When circumstances require, flight leads should direct a battle damage check after actual weapon deliveries and/or prior to return to base (RTB). Do not perform the check in night or IMC, and fly no closer than Route formation spacing per AFTTP 3-3.B-52. Crewmembers must be certified per AFI 11-2B-52V1.

3.5.19. **Mixed Formations.** Although standard formation procedures normally apply during mixed formations, give consideration to performance differences between participating aircraft. Flight lead must know these differences and thoroughly prebrief all aspects of the formation. Wingmen must ensure all formation members know the performance characteristics of their aircraft.

3.5.19.1. **Launch, Departure and Level Off.** Flight lead must determine the optimum sequence for launch of mixed aircraft formations based on performance, weather, airfield conditions, wake turbulence, and mission requirements. Normally, the fastest accelerating or highest climb speed aircraft should lead. For formations including KC-10 or E-4s with other lighter aircraft, the lighter aircraft will normally launch first due to wake turbulence considerations. One-minute interval is the standard for formation takeoffs. If weather conditions preclude 1 minute departures, do not accomplish formation takeoffs. Plan an en route or point parallel rendezvous.

3.5.19.2. **Climbs and Descents.** Due to performance differentials, exercise caution if climbs or descents are necessary with mixed formations. Thoroughly brief the procedure before flight.

3.5.19.3. **Cruise:**

3.5.19.3.1. Tradeoffs between optimum altitudes and airspeeds for aircraft type may be required to achieve maximum overall formation efficiency. Flight lead will determine and brief the best cruise parameters consistent with mission requirements.

3.5.19.3.2. Wingman consideration is paramount during altitude or airspeed changes. Flight lead must consider the most performance limited aircraft when making these changes.

3.6. Postflight:

3.6.1. Before landing, the aircraft commander will call the unit command post and request a combat intelligence branch representative debrief the aircrew immediately after landing whenever encountering hostile or suspected hostile activity during a mission. Air Force Reserve (AFRC) will contact an appropriate agency.

3.6.2. Flight crews will attend the maintenance debrief and will conduct a crew and formation flight debrief in accordance with procedures defined in the local Chapter 8 of this instruction. Complete all appropriate post-mission paperwork and turn it in as required. Units must establish procedures to ensure this paperwork is distributed to the proper agency in a timely manner.

3.7. Tactics. Each crew will plan, brief, and execute a realistic and sound tactical profile on every mission-oriented sortie.

Chapter 4

INSTRUMENT PROCEDURES

4.1. Takeoff and Join-up. Formation departures for the B-52 will comply with the applicable restrictions and instructions for a nonstandard formation as defined in FLIP. Flight lead will ensure ARTCC assigns IFF squawks for wingmen prior to departure.

4.2. Navigation. The B-52 is approved to use inertial navigation system (INS) for enroute Area Navigation (RNAV). RNAV approaches have not been adopted for use by the USAF and will not be flown. A discussion of Area Navigation can be found in the Airman Information Manual (AIM) and FLIP. Other navigation and instrument information can be found in FAAH 7110.65.

4.3. Simulated Instrument Flight. Use of vision restricting devices to simulate instrument flight is prohibited.

4.4. Instrument Approaches. See **paragraph 2.5.4.1** for approach review procedures. Refer to T.O. 1B-52H-1 Section II, Instrument Approaches, for applicable approach categories.

4.5. Airborne Radar Directed Approach (ARDA). In an emergency, it is possible for the navigator team to direct the pilot through a safe nonprecision approach. When aircrews request to practice an ARDA, they must meet the following conditions:

4.5.1. Use a Department of Defense (DOD) FLIP terminal approach procedure with a designated FAF. This does not restrict accomplishing an ARDA when cleared for a visual approach from the radar pattern provided VFR conditions can be maintained.

4.5.2. Obtain an ARTCC clearance for the specific approach procedure selected.

4.5.3. Advise the appropriate ARTCC facility that the ARDA will be flown along with the requested DOD FLIP terminal approach, if applicable.

4.5.4. Request ground radar monitor and traffic advisory service.

4.5.5. VMC weather conditions must prevail from the FAF to the MAP. ARDA under lower weather minimums is restricted to emergency conditions when no other type of approach is available.

4.5.6. Terminate the ARDA and resume pilot navigation any time it becomes apparent to any crewmember that the aircraft will exceed the parameters established for terminal instrument procedures (TERPs) as defined in AFMAN 11-226, *United States Standard for Terminal Instrument Procedures.*

Chapter 5

AIR EXPENDABLES EMPLOYMENT

5.1. General. This chapter establishes procedures for B-52 expendable training activity. Also reference AFI 11-214 and CJCSM 3212.02.

5.2. Flare Drop Activity:

5.2.1. Conduct live flare drop activity only in authorized special use airspace contained in current FLIP planning documents and overwater firing areas.

5.2.2. Do not drop flares if uncertain of aircraft position. If practical, survey the fallout areas visually and with radar before and during all flare drops.

5.2.3. **Safety Precautions:**

5.2.3.1. Do not power the flare ejector system until within the approved flare drop area.

5.2.3.2. Flare activity will be suspended or terminated whenever the aircrew is unable to sufficiently ensure safe conduct of the activity.

5.2.4. A right hand empty light on the ALE-20 control panel should illuminate when all flare stepper switches have been activated. This occurs when the flares are individually or fast train dispensed. It doesn't guarantee all flares have been expended. Therefore, do not accomplish low approaches or touch-and-go landings after making or attempting a flare drop. Touch-and-gos are authorized after munitions specialists confirm all flares were dispensed (none remaining). Do not attempt a taxi-back sortie with confirmed hung, retained, or misfired flares.

5.2.5. In case of an inadvertent flare drop, take the following actions:

5.2.5.1. Immediately safe the flare ejector system.

5.2.5.2. Record time and geographic coordinates of the inadvertent release.

5.2.5.3. Contact the applicable airspace controller and advise them of the incident, approximate location and estimated damage.

5.2.6. Units will develop local procedures to handle hung/hot flare situations.

Chapter 6

AIR-TO-GROUND WEAPONS EMPLOYMENT

6.1. References. AFI 11-214 contains air-to-surface procedures applicable to all aircraft. Also reference the AFI 13-212V1, *Weapons Ranges,* applicable range supplement and AFJI 11-204, *Operational Procedures for Aircraft Carrying Hazardous Materials.* The procedures contained in this chapter specify additional procedures or restrictions applicable to B-52 operations.

6.1.1. Direct questions concerning weapon ranges and restrictions to the local Squadron DOW/OSS-A5 or HQ AFGSC/A3TW if unable to find the OPR or responsible agency.

6.2. Responsibilities and Definitions:

6.2.1. On OT&E sorties, specific portions of this chapter may be waived by instructions contained in the operations order, test plan, or implementation message which directs the test.

6.2.2. **Terms:**

6.2.2.1. **Weapon.** Any live, inert, or training munitions.

6.2.2.2. Attempted Release:

6.2.2.2.1. The bombing system issues a release pulse in either automatic or manual mode with all weapons in "GO" or "RDY" status and targeted (1553/1760), or all Gravity SMO switches are correctly positioned.

6.2.2.2.2. When releasing 1553/1760 controlled weapons, the SMO determines if the weapon was successfully launched, was aborted, or is hung and displays either AWAY, ABORT or HUNG in normal video immediately following the location for that weapon on the bottom of the MFD display. When a weapon is successfully released, "xy: AWAY" is displayed for 5 seconds at the bottom of the PRGM display xy = location/station. After 5 seconds the xy location/station displays "X" or [Less AMI] "D".

6.2.2.3. **Hung Weapon:**

6.2.2.3.1. A weapon that doesn't separate from the aircraft after an attempted release. This may occur as a result of a release system or release unit malfunction resulting in a partially released bomb or a released bomb lying on closed bomb bay doors. **Note:** This includes weapons released and separation not confirmed or release status unknown.

6.2.2.3.2. ICSMS 1553/1760 controlled weapons can be determined hung by the OAS displays, "HUNG" and Less [AMI] "HG", will be displayed in reverse video on the FRMT-7 display. "xy:HUNG" will be displayed as a master fault.

6.2.2.4. **Retained Weapon.**

6.2.2.4.1. Weapons on board the aircraft with no release attempt or after successfully releasing the intended number of weapons in a partial load. For example, an aircraft with nine MK-82s plans to drop three bombs on each of three targets. Due to weather it attacks only one target. The aircraft now has six retained weapons. Weapons not released due to procedural errors are considered retained.

6.2.2.4.2. When attempting release of I553/1760 controlled weapons a weapon is considered retained provided OAS FRMT-7 “xy:AWAY”, “xy:HUNG” or Less [AMI] “HG” or “xy: NO ABORT” are not present for the intended weapons.

6.2.2.5. **Unconfirmed Hung Weapon.** A weapon that cannot be confirmed to be released either by RCO spot or OAS FRMT-7. Confirmation that the weapons were released via procedures in **paragraph 6.5.8** will remove the unconfirmed hung weapon status.

6.3. Planning Guidance:

6.3.1. When actual weapons (live or inert) are carried, adhere to the following guidance:

6.3.1.1. A target study officer or designated equivalent will brief aircrew on proper procedures prior to any flight carrying weapons.

6.3.1.2. Aircrews will comply with applicable flight manuals, range guides, and AFI 11-214.

6.3.1.3. Aircraft will follow a route to the release area that minimizes overflight of heavily populated and congested areas.

6.3.2. Releases may be performed only within a designated training range, approved weapons release area, or approved salvo area.

6.3.3. For weapon deliveries above 5,000 feet AGL, B-52 aircrews will use the following procedures:

6.3.3.1. Aircrews will confirm bomb aim point through a minimum of two radar-identifiable OAPs.

6.3.3.2. Aircrews will not expend any ordnance if any doubt exists as to the accuracy of the aircraft’s navigation system or intended target location.

6.3.3.3. B-52 aircrews may drop weapons in IMC or through an undercast provided they comply with applicable restrictions in the range supplement.

6.3.3.4. Adhere to theater and MPC SPINS for GPS FOM and OAS buffer restrictions.

6.4. Target Data Verification. All crewmembers will conduct a thorough and complete verification of targeting data in flight for all weapons, both guided and unguided.

6.5. Inflight Procedures:

6.5.1. Do not open bomb bay doors during flight with internal weapons on board other than for intentional release or jettison.

6.5.2. While carrying weapons, do not conduct approach to stall, simulated engine loss procedures, touch-and-go landings, or other potentially hazardous activity. Carrying weapons does not preclude accomplishing fighter intercept exercises, air refueling, or transition excluding simulated engine loss procedures and touch-and-go landings.

6.5.3. Accomplish "Weapons Preparation for Release" check over open water or sparsely populated areas when possible.

6.5.4. Do not complete the release configuration check until the aircraft is within the designated bombing range.

6.5.5. While carrying weapons configured for release (Release Configuration Check-Complete), do not conduct Fighter Intercept Exercises (FIEs) (unless planned as part of an exercise and conducted in range airspace), simulated bomb/AGM/GBU runs, transition, air refueling (unless required for mission completion), or other potentially hazardous activity.

6.5.6. **Internal Weapons Release Restrictions and Procedures:**

6.5.6.1. While carrying internal weapons (live or inert) do not simulate internal weapons release.

6.5.6.2. If there are no external weapons, simulated external weapons releases may be accomplished with SMO simulations while in full "sim" mode. The OAS will be re-loaded with a FERRY mission and the weapons being simulated will be a different SMO from the weapons actually being carried internally. There will be no SMO loaded for internal weapons.

6.5.7. **External Weapons Release Restrictions and Procedures:**

6.5.7.1. While carrying external weapons, live or inert, do not simulate external weapons release.

6.5.7.2. If there are no internal weapons, simulated internal weapons releases may be accomplished with SMO simulations while in full "sim" mode. The OAS will be re-loaded with a FERRY mission and the weapons being simulated will be a different SMO from the weapons actually being carried externally. There will be no SMO loaded for external weapons.

6.5.8. **Release Verification.** Confirm weapons releases by one of the following means:

6.5.8.1. Verified by the RCO, and light indications are consistent with RCO observations. The RCO must positively confirm the exact number of weapons programmed for release.

6.5.8.2. For release of a single live weapon at night from low altitude, if the RCO is not available to confirm the weapon impact, trailing aircraft in the formation may serve to visually confirm weapon release.

6.5.8.3. Targeting Pod video may be used to confirm weapon impacts by the aircrew or by another aircraft in the formation with the following restrictions:

6.5.8.3.1. The targeting pod video must be recorded with in-flight playback capability.

6.5.8.3.2. The aircrew or wingman must be able to see all weapon impacts for the exact number of weapons planned for release on the video.

6.5.8.3.3. Weapons impacts verification by the aircrew or wingman is limited to a maximum of nine weapons.

6.5.8.3.4. If unable to view the required number of weapon impacts, or there is any doubt as to the number of impacts on the targeting pod video, the weapons release is unverified.

6.5.8.4. If unable to confirm impacts of all weapons programmed for release as outlined above, a visual check of the weapons must be accomplished to confirm weapons status prior to conducting any additional training.

6.5.8.4.1. Internal weapons. A visual check of the bomb bay must be accomplished to confirm weapons status prior to conducting any additional training.

6.5.8.4.1.1. Visual checks of the bomb bay may be accomplished by bomb bay cameras, if equipped.

6.5.8.4.1.2. Any crewmember entering the bomb bay must be mission and weapons qualified and must avoid inadvertent contact with the release mechanisms.

6.5.8.4.1.3. Crewmembers will not enter the bomb bay to release bombs or to perform maintenance on release equipment.

6.5.8.4.1.4. Weapons remaining in the bomb bay after an attempted release are hung munitions. Aircrews will comply with procedures and restrictions in **paragraph 6.5.10**

6.5.8.4.2. External weapons. A visual check of the pylons must be accomplished to confirm weapons status prior to conducting any additional training.

6.5.8.4.2.1. Visual confirmation of the pylons by other aircraft in the formation may be accomplished when carrying 500 lbs class weapons or larger, day/VMC only. The other aircrew must be able to observe all pylon weapon stations and will report the exact number of weapons remaining on each pylon, if any.

6.5.8.4.2.2. Targeting pod equipped aircraft may use the pod to visually confirm the status of the pylons on other aircraft in the formation. The laser mode will be set to TRAIN, no laser code will be set, and laser arming will not be selected.

6.5.8.4.2.3. Visual confirmation of the pylons by the crew is authorized if the weapons attempted to be released were loaded externally in positions visible to the aircrew.

6.5.8.4.2.4. Crews unable to get confirmation of weapon impacts from an RCO or trailing aircraft and are unable to visually verify the status of their external weapons will assume a hung weapons status and follow the procedures in **paragraph 6.5.10**

6.5.8.5. After positive confirmation of release of all weapons, aircrews may conduct additional training without restriction provided no weapons remain on the aircraft.

6.5.9. Retained Weapons Restrictions.

6.5.9.1. Crews experiencing retained weapons due to contingencies other than release malfunctions may conduct training activity excluding approach to stall, simulated engine loss procedures, touch-and-go landings, or other potentially hazardous activity. Retained weapons do not preclude accomplishing fighter intercept exercises, air refueling or transition excluding simulated engine loss procedures and touch-and-go landings. Simulated bombing or missile activity may be conducted as restricted by **paragraphs 6.5.6**, **6.5.7** and **Table 6.1** for allowable weapons training.

6.5.9.2. Observe the following safety precautions for continued activity with retained training weapons:

6.5.9.2.1. Accomplish post release/abort checklist before conducting any subsequent training activity.

6.5.9.2.2. No release system, indicator, or weapon bay door malfunction may exist.

6.5.9.3. Aircrews with retained weapons will follow locally developed guidance for the safe recovery of the aircraft and de-arming procedures.

6.5.10. **Hung Weapons Restrictions.**

6.5.10.1. For weapons remaining on the aircraft after an attempted release, or if the external weapons status is not verified, the weapons will be treated as hung weapons.

6.5.10.2. After an unsuccessful release attempt, contact the RCO for permission to release or jettison hung weapons in a suitable area. Follow RCO instructions and all warnings and cautions in the appropriate technical order.

6.5.10.3. If a hung weapon cannot be jettisoned, or jettison is not verified, the crew will accomplish the post release/abort checklist and return directly to home station or other suitable landing base, avoiding over flight of populated areas. Air refueling may be conducted to ensure the safe recovery of the aircraft. No other training may be accomplished.

6.5.10.4. Aircrews with hung weapons will follow locally developed guidance for the safe recovery of the aircraft and de-arming procedures.

6.6. Targeting Pod (TGP) Restrictions. Minimum altitude for use of the TGP is 1,000 ft AGL.

Table 6.1. Allowable simulated weapons training with carried/retained weapons.

CARRIED/ RETAINED WPNS	**Simulated Training**							
	Int CALCM/ ALCM	**Ext CALCM/ ALCM**	**Int Gravity**	**Ext Gravity**	**Ext1760 Gravity**	**JASSM**	**JDAM/ WCMD**	**Nuke Gravity**
Int CALCM	No	No	No	Yes	Yes	Yes	Yes	No
Int Gravity	No	Yes	No	No	Yes	Yes	Yes	No
Ext Gravity	Yes	No	No	No	No	No	No	Yes
Ext 1760 Gravity	Yes	No	Yes	No	No	No	No	Yes
JDAM/WCMD	Yes	No	Yes	No	No	No	No	Yes
JASSM	Yes	No	Yes	No	No	No	No	Yes

Chapter 7

ADDITIONAL AIRCREW AND AIRCRAFT OPERATIONAL LIMITS AND RESTRICTIONS

7.1. New/Modified Aircraft Equipment/Weapons. Crewmembers not qualified in the operation of new or modified aircraft equipment are restricted in aircrew duties as follows:

7.1.1. They will not be placed on alert with an aircraft so equipped or modified.

7.1.2. They will not operate that equipment on any flight unless under the supervision of a current and qualified instructor of like specialty.

7.2. Number of Personnel Authorized Aboard B-52 Aircraft. When the number of crewmembers required aboard a tactical aircraft exceeds the number of basic crew positions in the aircraft, provide each additional crewmember with appropriate safety, communications, and survival equipment.

7.3. Dual Seat Navigator (DSN) Restrictions: Navigators who have completed the applicable DSN training qualification program may occupy either seat inflight provided the following restrictions are met:

7.3.1. Inexperienced DSNs must fly under the supervision of an experienced DSN, Radar Navigator (RN), or Instructor Navigator. If the RN is not dual seat qualified, they must occupy the left seat inflight. RNs and experienced DSNs may fly unsupervised.

7.3.2. Regardless of the seat occupied, individuals will perform the duties associated with their crew position as defined in T.O. 1B-52-1, chapter 4.

7.4. Authorized Fuel Loads and Sequences. Load aircraft with fuel in accordance with requirements of the T.O. 1B-52H-5, *Basic Weight Checklist and Loading Data.* Fuel usage sequences in the flight manual were designed for use in conjunction with proper fuel loading procedures to realize maximum aircraft service life. Adhere to fuel loads specified in the B-52 technical orders for all peacetime missions. Submit requests for waiver of this policy by joint unit OG/CC and MXG/CC message to HQ AFGSC/A3TV and HQ AFGSC/A4MA with informational copies to NAF/OV and OCALC/LAHR. Only HQ AFGSC/A3TV, in coordination with HQ AFGSC/A4MA, can authorize deviations to normal fuel loads. (AFRC will submit a waiver to HQ AFRC/A3 and an information copy to 10 AF and HQ AFGSC/A3TV).

7.5. Performance Planning Criteria:

7.5.1. A minimum of 1,000 feet overrun must be available in addition to the minimum runway required (MRR). When 1,000 feet of overrun is not available, reserve a portion of the runway to satisfy the minimum overrun requirements. Runway available for takeoff planning must be actual runway length minus any portion of the runway used to satisfy overrun requirements at the liftoff end of the runway.

7.5.2. As a general rule, normal peacetime performance criteria and the provisions of paragraph 7.5.1 apply to conventional operations and must be observed in the interest of safety and economy.

7.6. Steep Turns. Limit the maximum target bank angle to 45 degrees (not to exceed 50 degrees). The aircraft must remain clear of clouds throughout the maneuver. This does not restrict combat breakaway maneuvers defined in the flight manual. Do not perform steep turns during traffic pattern operations. For steep turns at or below 5,000 feet AGL/ASL, the following restrictions apply:

7.6.1. Weather must be day VFR.

7.6.2. Maneuver must be accomplished at or above 1,000 feet AGL/ASL with the flaps up. The aircrew will maintain at or above the minimum recommended airspeed or Mach for the planned bank angle throughout the maneuver.

7.7. Unusual Attitudes and Stalls. Prohibited.

7.8. Initial Buffet:

7.8.1. Perform all inflight initial buffet practice as prescribed in the flight manual and under instructor pilot supervision.

7.8.2. Pilots must review and discuss the correct recovery procedures and limitations for accomplishing initial buffet with the crew during mission planning.

7.8.3. Practice recovery from initial buffet at a minimum altitude of 20,000 feet above the terrain. If clouds exist between the aircraft and the terrain, the aircraft must be at least 10,000 feet above the tops of the clouds. Do not practice recovery from initial buffet above FL 300 or at gross weights above 300,000 pounds.

7.8.4. Perform the entire initial buffet maneuver with wings level.

7.8.5. Do not practice initial buffet with weapons or missiles loaded.

7.9. Chase Operations. When B-52 pilots participate in chase operations the following restrictions apply:

7.9.1. Prior to each chase sortie, supervisory personnel will ensure the lead and chase pilots are briefed on the mission content, restrictions, and responsibilities.

7.9.2. The lead and chase aircraft must maintain radio contact throughout the chase operation.

7.9.3. It is unsafe to fly in close vertical proximity to another aircraft due to the interrelated aerodynamic effects. Never fly directly over or under another aircraft. The chase position is defined as:

7.9.3.1. Wings level position - at least 150 feet between wing tips or;

7.9.3.2. Stern position - approximately 1/4 mile behind and 100 feet below lead.

7.9.4. The normal chase position will be on the right wing of lead.

7.9.5. The lead aircraft must inform the chase aircraft and receive acknowledgment prior to initiating any of the following:

7.9.5.1. Turns.

7.9.5.2. Climbs and descents.

7.9.5.3. Airspeed change.

7.9.5.4. Configuration change (e.g. flaps, gear, airbrakes, etc.)

7.10. Fuel Minimums:

7.10.1. The fuel reserve requirements of AFI 11-202V3 apply except as outlined below:

7.10.1.1. Plan missions to accomplish final landing with a minimum of 20,000 pounds.

7.10.1.2. Plan the mission so the usable fuel over the alternate, if required, is a minimum of 24,000 pounds.

7.10.1.3. Fuel reserves for conventional operations will be as designated in the operations order.

7.10.1.4. The minimum fuel reserve for remote or island destination is 34,000 pounds. If weather conditions are such that an alternate airfield is required in accordance with AFI 11-202V3, then minimum fuel reserve is 54,000 pounds. The definition of a remote or island airfield is contained in AFI 11-202V3AFGSCSUP.

7.10.2. Certain safety of flight conditions such as emergencies, go-arounds, etc., may occasionally necessitate final landing with less fuel than specified above.

7.10.3. Individual units may dictate more restrictive fuel minimums in their local Chapter 8.

7.11. Air Refueling Limitations and Restrictions:

7.11.1. Instruction in air refueling procedures, excluding rendezvous, is prohibited when the receiver aircraft is loaded externally or internally with nuclear weapons.

7.11.2. Do not attempt EMCON rendezvous or refueling training unless at least 1,000 feet vertical separation is assured between tanker and receiver. Do not close within 1,000 feet vertically of the tanker unless reliable radio communications are established except for actual nuclear operations, critical fuel shortage, as directed in governing operations orders, or during Emission Option 2, 3, or 4 training. Brief Emission Option 2, 3, or 4 procedures before flight.

7.11.3. Do not accomplish air refueling during training missions when any of the following conditions exist:

7.11.3.1. When encountering turbulence which, in the opinion of the pilot or boom operator, denies a safe margin of control of either aircraft or boom.

7.11.3.2. When two or more engines are shut down or when any engine has been shut down due to fire or fire indication.

7.11.3.3. When the tanker has less than all engines operating.

7.11.3.4. When any flight control problems are suspected or encountered which, in the opinion of the receiver pilot, would deny a safe margin of control.

7.11.3.5. When tanker aircraft is unable to retract landing gear.

7.11.3.6. When the aircraft gross weight is less than 230,000 pounds or more than the maximum limits specified in the appropriate flight manual.

7.11.4. Do not conduct air refueling after known losses of tanker disconnect capability (including tanker manual operation without tanker disconnect capability or manual boom latching) except as authorized below:

7.11.4.1. During an emergency fuel situation.

7.11.4.2. When necessary to complete the following missions: operational nuclear or conventional, ORI, Global Guardian, emergency evacuation, deployment, and redeployment.

7.11.4.3. When conducting air refueling under any of the above conditions, limit contact time and number of contacts to that necessary to complete mission requirements.

7.11.5. Reverse air refueling and manual boom latching procedures training must be under instructor pilot supervision. Brief procedures used between receiver pilots and boom operators during mission planning. Inflight coordination between receiver pilot and boom operator must include briefing items as required by applicable air refueling technical orders. Both tanker and receiver air refueling system must be fully operable.

7.11.6. Do not accomplish breakaway training from the contact position or boom limit demonstration unless:

7.11.6.1. The receiver signal system is in normal.

7.11.6.2. The receiver and tanker have assured normal disconnect capability prior to initiating maneuver.

7.11.7. For breakaway training, the tanker pilot and boom operator and the receiver pilot will coordinate the maneuver prior to inflight accomplishment. Inflight coordination must include when the maneuver will occur and who will give the command of execution.

7.11.8. For boom envelope demonstrations, the receiver pilot and the boom operator will confirm normal disconnect capability and discuss the maneuver prior to accomplishment. Inflight coordination must include the receiver pilot informing the boom operator when commencing the demonstration, the limit to be demonstrated, and when terminating the demonstration.

7.11.9. To strengthen the safety aspects of copilot air refueling training the following procedures apply:

7.11.9.1. Accomplish receiver copilot refueling, autopilot on or off, only under the following conditions:

7.11.9.1.1. Instructor pilot supervision or supervision by a mission ready pilot, who has been designated in writing by the squadron commander.

7.11.9.1.2. The receiver pilot must inform and receive acknowledgment from the tanker pilot and boom operator.

7.11.9.2. Accomplish tanker copilot refueling with the tanker autopilot off only under the following conditions:

7.11.9.2.1. The tanker pilot must inform and receive acknowledgment from the receiver pilot.

7.11.9.2.2. During this time the receiver must be flown by a qualified receiver pilot (N/A FTU).

7.12. Low Altitude Limitations. This paragraph establishes operational limitations for mission employment area training activity. The low altitude environment defined by this regulation is at or below 5,000 feet AGL/ASL.

7.12.1. Crews will not fly lower than 1,000 AGL/ASL in mission employment areas during Low Altitude Training (LOWAT). Exception: Test aircrew may conduct low altitude training at TA altitudes consistent with unit requirements and IAW guidance in this instruction and other current directives.

7.12.2. Low altitude weight restriction is 230,000 to 420,000 pounds. These restrictions apply whenever the aircraft is operated at or below 5,000 feet above ground level or during ocean surveillance/reconnaissance operations at or below 5,000 feet MSL. The minimum low altitude weight restriction does not apply to en route, cruise or traffic pattern operations.

7.12.3. Use of the autopilot nonsteering modes, other than second station, is not recommended for low altitude operations. Do not use nonsteering modes of the autopilot below 1,000 feet AGL except for the stab modes comparison check.

7.12.4. Bank angles during low level or operations below 1,000 feet AGL/ASL are limited to 30 degrees maximum. Use steep turn guidance as applicable for higher altitudes.

7.12.5. **Minimum clearance plane settings (TA operations only).** 300 feet day and 500 feet night are the minimum settings authorized under prevailing conditions. Units will plan and train toward these minimum altitudes, but the actual altitude flown may be anywhere between the minimum TA altitude and the MSA. The determining factor will be crew judgment, based on evaluations of aircraft equipment, weather conditions, aircrew capabilities, proficiency, and fatigue.

7.12.5.1. Basic Mission Capable (BMC) individuals must maintain appropriate low level currency or fly with an instructor of like specialty.

7.12.5.2. Crewmembers will fly their first FLAG sorties, during an exercise, no lower than 500' AGL to allow training area familiarization and orientation.

7.12.5.3. Minimum TA altitudes for MTRs in FLIP AP/1B and AP/3 and those altitudes published in the applicable clearance plane letter will take precedence if higher than the above listed altitudes.

7.12.5.4. Aircrews using NVGs will fly the appropriate night clearance plane settings.

7.12.5.5. Fly visual contour during day TA Visual Conditions only. The visual contour altitude will be no lower than the minimum day TA clearance plane setting or the minimum altitude for the route segment/area, whichever is higher. Man-made obstructions must be taken into account when determining the clearance plane and the altitude to be flown.

7.12.5.6. Busy Luggage weapon tests may be conducted at test plan prescribed altitudes but no lower than 200 feet AGL. Non-instructor aircraft commanders and radar navigators will be briefed by squadron instructors on the characteristics of very low altitude flight and will fly at least one practice sortie with instructors of like specialty

experienced in low altitude TA operations, stepping down to the altitude required for the test.

7.12.5.7. Do not conduct low altitude bomb/EA runs against scoring sites at an altitude below the minimum tracking altitude for any target being attacked unless accomplishing a Defensive Action Bomb Run.

7.12.5.8. Aircrews must be constantly aware of weather conditions. Crews that encounter IMC will immediately climb to MSA. Climb to MSA under visual conditions whenever possible.

7.13. Traffic Pattern Limitations:

7.13.1. Use the following procedures for all landings.

7.13.1.1. To safely land a large jet aircraft, all landings (IFR and VFR) should look the same. Fly a stabilized approach with a standard 2.5 to 3.0 degree glidepath which is compatible with standard ILS/Visual Approach Slope Indicator (VASI). Use a visual aim point of 1,000 feet down the runway corresponding with the "Fixed Distance Markers" on a precision runway.

7.13.1.2. Plan to land (IFR and VFR) within the designated touchdown zone (TDZ). AFJMAN 11-226, *US Standard for Terminal Instrument Procedures (TERPS),* defines the TDZ as the first 3,000 feet of the landing runway beginning at the threshold.

7.13.1.3. Plan normal landings (IFR and VFR) to touch down on centerline within the TDZ at a point not less than 1,000 feet beyond the threshold. For all landings, use a runway of sufficient width and length to permit a safe, full stop landing without the drag chute. The desired TDZ is 1,200 to 2,500 feet beyond the threshold. Make the actual touchdown at a point and speed which will permit a safe, full stop landing within the remaining runway. Initiate a go-around if this is not possible. Brief procedures to use in the event of an unplanned go-around before landing.

7.13.2. Touch-and-go landings are authorized only under the following conditions:

7.13.2.1. Flight manual restrictions and procedures apply.

7.13.2.2. Use a runway of sufficient width and length to permit a safe, normal full stop landing without the drag chute. Make the actual touchdown in the designated TDZ of the runway at a point and speed which would enable a safe full stop landing on the remaining runway. Initiate a go-around if this is not possible.

7.13.2.3. The Runway Condition Reading (RCR) must be 9 or higher for touch-and-go landings.

7.13.2.4. The flight duty limitations of AFI 11-202V3 and MAJCOM supplement apply.

7.13.2.5. Non-IP aircraft commanders are limited to a maximum of 4 degrees crosswind crab.

7.13.2.6. Non-IP aircraft commanders require a minimum 1,000 feet ceiling and 3 miles visibility.

7.13.3. Instructor pilots or aircraft commanders will brief, either inflight or during mission planning, the individual being supervised on the following items prior to supervising touch-and-go landings.

7.13.3.1. Flight manual procedures.

7.13.3.2. The importance of smooth power application and stabilizing power before advancing throttles.

7.13.3.3. Compressor stalls, including proper preventive action, recognition, and corrective action.

7.13.3.4. Emergency jettison of drag chute.

7.13.3.5. Proper use of airbrakes and stabilizer trim.

7.13.3.6. Instructor Pilot (IP) or Aircraft Commander (AC) taking control of aircraft when necessary.

7.13.3.7. Unplanned go-around using all throttles.

7.13.4. Do not practice landings with less than 100 percent flaps, except where noted.

7.13.5. Normally, deploy the drag chute on all full stop landings. Should operational requirements dictate a full stop landing be made without a drag chute, comply with flight manual taxi back limitations.

7.13.6. Do not perform taxi back landings on wet runways.

7.13.7. Pilots may fly overhead VFR traffic patterns provided that they are certified on their unit Letter of Xs. When flying overhead VFR traffic patterns, pilots will adhere to all procedures outlined in applicable local procedures publications (e.g., local 11-250 instructions).

7.13.8. See **Table 7.1** for inflight and traffic pattern limitations.

7.14. Emergency Limitations:

7.14.1. Emergencies place unique demands on all crewmembers. Each situation requires proper analysis, correct application of appropriate procedures, preventive action to preclude recurrence or further degradation, and careful assessment of the aircraft and aircrew's capability to continue the mission. The following general guidance provides the aircraft commander a framework for making decisions in response to emergency situations:

7.14.1.1. Maintain aircraft control.

7.14.1.2. Assess the need for emergency egress.

7.14.1.3. Perform required critical actions, assess the degree of degradation, and evaluate the capability to continue the mission.

7.14.1.4. Contact the unit or controlling command post when encountering emergencies. While this should be accomplished as soon as practical, it should not interfere with immediate concerns dictated by the situation (i.e. aircraft control, checklist procedures, and notifying ARTCC agencies). Weigh carefully the impact of continuing the mission versus the capabilities of the aircraft and the aircrew.

7.14.1.5. If aborting the mission, consider the following options:

7.14.1.5.1. Return to the departure base or continue to the destination base via the most direct route.

7.14.1.5.2. Land at the nearest suitable B-52 base.

7.14.1.5.3. Land at the nearest suitable AFGSC/ACC base.

7.14.1.5.4. Land at the nearest possible airfield.

7.14.1.5.5. Only limited training is authorized while returning to the local area or reducing gross weight for landing. Prohibited activities are: low level navigation and bombing, fighter activity, transition, and air refueling (unless required for safe recovery of the aircraft).

7.14.1.6. If continuing the mission, consider the effects on the mission of the following malfunctions:

7.14.1.6.1. Loss of pressurization.

7.14.1.6.2. Loss of mapping radar.

7.14.1.6.3. Loss of navigation capability.

7.14.1.6.4. Degraded instrument capability.

7.14.1.6.5. Weather avoidance capability.

7.14.1.6.6. Potential effect of multiple or compound equipment malfunctions.

7.14.2. Takeoffs with one or more engines inoperative (peacetime) from start of takeoff roll are prohibited. ***EXCEPTION:*** During emergency evacuation, launch of aircraft with one or more engines inoperative may be accomplished at the discretion of the wing commander or when specifically directed by higher headquarters. At no time will launch be directed when computed takeoff distance exceeds 95 percent of runway available.

7.14.3. If it becomes necessary to shut down two or more engines, or one engine for fire or fire indication, abort the mission.

7.14.4. Refueling is not authorized with two or more engines inoperative or when any engine is shut down due to fire or fire indication, except when fuel is required to safely recover the aircraft.

7.14.5. Compute performance with one or more engines inoperative assuming the loss of another engine.

7.14.6. Aircraft with confirmed or suspected fuel leaks will abort the mission. Remain in the local area or proceed to the departure base or destination base by the most direct route. If circumstances permit, reduce to routine landing weight. Do not allow the center of gravity to exceed safe limitations or attempt any training activity, which would jeopardize safe recovery of the aircraft. Contact AFGSC controlling agencies for assistance.

7.15. Fuel Quantity Indication System Failure. During peacetime mission, each fuel quantity indicator for each fuel tank must be fully operational. If a fuel quantity indicating system failure is discovered prior to flight, the following exceptions apply:

7.15.1. When a standard fuel load results in one or more empty tanks, the respective fuel quantity indicator for the empty tank need not be fully operational provided:

7.15.1.1. The tank will remain empty throughout the flight, including inflight refueling.

7.15.1.2. The fuel quantity gauge indicates zero.

7.15.1.3. The circuit breaker for the respective indicator is pulled and a safety clip installed to prevent inadvertent resetting.

7.15.2. Aircraft may be flown with either one external or one outboard, but not more than one, wing tank gauge inoperative or malfunctioning, provided the following procedures are adhered to:

7.15.2.1. The aircraft is loaded with a standard fuel load.

7.15.2.2. The circuit breaker for the inoperative or malfunctioning gauge is pulled and a safety clip installed to prevent inadvertent resetting. In this situation, the pilots must realize that regardless of the gauge indication, the total fuel quantity indicator will be receiving indications that the tank is empty. Therefore, there will be a discrepancy between the total fuel quantity indication and the actual amount of fuel on board.

7.15.2.3. The fuel flow indicator for that tank is fully operational.

7.15.2.4. Pilots must be particularly watchful when using fuel from a tank having an inoperative or malfunctioning fuel gauge since the only indication of fuel flow will be the fuel flow indicator light, lateral trim indications, and balance of fuel between main tanks one and four. The Fuel Quantity Indicating System (FQIS) sends a voltage to the total fuel quantity gauge rather than a restrictive value. When the circuit breaker is pulled, the indication to the total fuel quantity indicator from that gauge will be zero.

7.16. Formation. Authorized formation types are described in AFTTP 3-3.B-52.

7.16.1. Route/Observation, Air Refueling Visual Observation, and Fighting Wing/Wedge are visual formations and require day VMC. Aircraft commanders will be certified on their unit Letter of Xs (per AFI 11-2B-52V1) prior to flying these formation positions and before supervising their pilot.

7.16.2. Route/Observation may be flown below 5,000’ AGL only during departures, recoveries, or authorized flyovers.

7.16.3. Route/Observation is not a tactical employment formation. Time spent in this formation will be minimized due to limited maneuverability and increased workload. Aircraft must be stabilized at 1,000’ before proceeding closer to lead.

7.17. Aircrew and Aircraft Limitations:

7.17.1. Brief all practice AFTTP 3-1.B-52 maneuvers or emergency procedures before the maneuver (either inflight or during mission planning). The pilot should alert all crewmembers prior to all maneuver demonstrations or inflight emergency procedures practice.

7.17.2. Do not practice compound emergencies during critical phases of flight except those specifically authorized for CFIC training.

7.17.3. In an actual emergency, terminate all training and emergency procedures practice. Resume training only when the pilot in command determines no hazard to safe aircraft operations exists.

7.17.4. Seat occupancy guidance:

7.17.4.1. During AFTTP 3-1.B-52, maneuvers and during emergencies, crewmembers will return to their respective crew positions and remain there unless operational requirements or the nature of the emergency dictate otherwise.

7.17.4.2. When carrying nuclear weapons, mission ready crewmembers or instructors must occupy basic crew positions.

7.17.5. RCR for typhoon or emergency evacuations. With NAF approval, an RCR of 12 may be used for wet runway takeoff data computations during typhoon or emergency evacuations.

Table 7.1. Inflight and Landing Limitations.

Maneuver	Max Wt	Weather	IP Supervision	Additional Restrictions	Remarks
Simulated Engine Loss on Takeoff	290,000 lbs	*NOTE 1*	Required	N/A	Limited to one engine simulated inoperative above S-1 speed or 100 KIAS, whichever is higher. Dry runway. Max 10 kt crosswind component.
Simulated Six Engine Approach	290,000 lbs	*NOTE 1*	Required for other than day VFR	*NOTE 2*	
Simulated Six Engine Landing	290,000 lbs	*NOTE 1*	Required	*NOTE 3*	Dry runway. Max 10 kt crosswind component.
Simulated Six Engine Approach and Go-Around (Symmetric)	250,000 lbs	*NOTE 1*	Required for other than day VFR	*NOTE 2*	
Flaps Up Approach	290,000 lbs	*NOTE 1*	Required for other than day VFR	*NOTES 2 & 5*	Landing data and procedures must be reviewed by an instructor pilot during mission planning (N/A AFRC).
Flaps Up Touch-and-go Landings	250,000 lbs	*NOTE 1*	Required (CFIC)	*NOTES 4 & 5*	Qualified CFIC Instructor Required. No gusty winds.
Low Approaches with One Engine Shut Down	290,000 lbs	*NOTE 1*	Required for other than day VFR	*NOTE 2*	Prohibited if engine(s) was shut down for fire, fire indication, or fuel leak.
Traffic Pattern Operations	325,000 lbs				
Landing Attitude Demonstration	290,000 lbs	Day/Night *NOTE 6*	Required		Flaps down, touch-and-go limitations apply

Simulated Rudder/Elevator Out Approach	270,000 lbs		Required (CFIC)	NOTE 2	Qualified CFIC Instructor Required. CFIC only. Avoid turbulence.
Two-Engine Go-Around Capabilities	250,000 lbs		Required (CFIC)	NOTE 7	Qualified CFIC Instructor Required. CFIC only.

Notes:

1. Day/Night. No lower than circling minimums or 1,000 feet ceiling and 3 miles visibility (2 miles if under radar contact), whichever is higher.

2. 200 feet Height Above Touchdown (HAT) or Decision Height (DH)/Minimum Descent altitude (MDA) for the approach being flown, whichever is higher.

3. Comply with the following if a touch-and-go is to be accomplished: Touch-and-go limitations apply. No other simulated emergencies may be practiced during the maneuver. Rudder trim must be centered when decision is made to land. Eight engine symmetrical thrust must be used for takeoff. If unplanned go-around is executed, symmetrical thrust will be established on all engines.

4. Dry runway crosswind component is 10 knots maximum. Touchdown must be made in the first third of the runway or go-around will be initiated.

5. 200 feet AGL to make decision to land or go-around.

6. Discernible horizon and the end of the runway visible.

7. Initiate go around no lower than 200 AGL for flaps up and 800 AGL for flaps down two-engine go-around capabilities demonstrations.

Chapter 8

LOCAL OPERATING PROCEDURES

8.1. General. Distribute this chapter to MAJCOM/NAF OPRs, as applicable. This chapter should not duplicate and will not be less restrictive than the provisions of this or any other publication. Specific items should include, but need not be limited to, the following:

8.1.1. Purpose

8.1.2. Applicability

8.1.3. Recommended Changes

8.1.4. Normal Operating Procedures

8.1.5. Instrument Procedures

8.1.6. Weapons Employment

8.1.7. NVG Procedures

8.1.8. Abnormal Operating Procedure.

8.1.9. Classified Local Electronic Warfare Mission Guide

8.2. Forms Adopted. AF Form 847, *Recommendation for Change of Publication.* AF Form 4037, *OAS Briefing/Debriefing Analysis and Review.* DD Form 175, *Military Flight Plan.*

PHILLIP M. BREEDLOVE, Lt Gen, USAF
DCS, Operations, Plans and Requirements

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTINGINFORMATION

References

AFPD 11-2, *Aircraft Rules and Procedures*, 14 Jan 2005

AFPD 11-4, *Aviation Service*, 1 Sep 2004

AFI 11-2B-52V1, *B-52 Aircrew Training*, 21 Nov 2006

AFI 11-202V3, *General Flight Rules*, 5 Apr 2006

AFI 11-209, *Aerial Event Policy and Procedures*, 4 May 2006

AFI 11-214 *Aircrew, Weapons Director, and Terminal Attack Controller Procedures for Air Operations*, 22 Dec 2005

AFI 11-202V2 AFGSC Sup, *Aircrew Standardization/Evaluation Program*, 1 Feb 2010

AFI 11-205, *Aircraft Cockpit and Formation Flight Signals*, 19 May 1994

AFI 11-214, *Aircrew, Weapons Director, and Terminal Attack Controller Procedures for Air*

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AFI 33-360, *Publications and Forms Management*, 18 May 2006

AFI 48-123, *Medical Examinations and Standards*, 24 Sep 2009

AFMAN 33-363, *Management of Records*, 1 Mar 2008

AFMAN 10-2602, *Nuclear, Biological, Chemical and Conventional (NBCC) Defense Operations and Standards*, 29 May 2003

AFMAN 11-217V1, *Instrument Flight Procedures*, 3 Jan 2005

T.O. 1B-52H-1, *Flight Manual*, 15 Oct 2008

T.O. 1B-52-25-1, *Nuclear Bomb Basic Information*, 1 Sep 2006

T.O. 1B-52-34-2-1, *Nonnuclear Weapons Delivery Manual*, 26 Jan 2008

T.O. 1B-52-5-2, *Flight Manual Loading Data*, 8 Jan 2008

FAAH 7610.4J, *Special Military Operations*, 14 Feb 2008

Abbreviations and Acronyms

A/A—Air to Air

AC—Aircraft Commander

ACC—Air Combat Command

ADI—Attitude Director Indicator

AFGSC—Air Force Global Strike Command

AFGSCI—Air Force Global Strike Command Instruction

AFI—Air Force Instruction

AFRC—Air Force Reserve Command

AFTO—Air Force Technical Order

AFSATCOM—Air Force Satellite Communications

AGL—Above Ground Level

AGM—Air to Ground Missile

AHRS—Attitude Heading Reference System

AIRMET—Airman's Meteorological Information

ALCM—Air Launched Cruise Missile

ALTRV—Altitude Reservation

AMI—Aviation Midlife Improvement

AR—Air Refueling

ARCP—Air Refueling Control Point

ARCT—Air Refueling Control Time

ARDA—Airborne Radar Directed Approach

ARTCC—Air Route Traffic Control Center

ASL—Above Sea Level

BMC—Basic Mission Capable

BRL—Bomb Release Line

CFIC—Central Flight Instructor Course

CHUM—Chart Update Manual

DCPPI—Displaced Center Plan Position Indicator

DH—Decision Height

DOD—Department of Defense

DTC—Data Transfer Cartridge

EA—Electronic Attack

EAM—Emergency Action Message

EC—Electronic Combat

EMA—End Maneuver Area

EMCON—Emissions Control

EVS—Electro-Optical Viewing System

EW—Electronic Warfare Officer

EWO—Emergency War Order

FAAH—Federal Aviation Administration Handbook

FAF—Final Approach Fix

FAR—Federal Aviation Regulation

FIE—Fighter Intercept Exercise

FL—Flight Level

FLIP—Flight Information Publications

FLIR—Forward Looking Infrared

FQIS—Fuel Quantity Indicating System

FRL—Fuselage Reference Line

FSS—Flight Service Station

FTU—Formal Training Unit

FVR—Flight Vector Reference

HA—Absolute Altitude

HAT—Height Above Touchdown

HHD—Higher Headquarters Directed

HF—High Frequency

IAF—Initial Approach Fix

IAW—In Accordance With

ICAO—International Civil Aviation Organization

ID—Identification

IFF—Identification Friend or Foe

IFR—Instrument Flight Rules

ILS—Instrument Landing System

IMC—Instrument Meteorological Conditions

INU—Inertial Navigation Unit

IP—Initial Point or Instructor Pilot

IR—IFR Military Training Route

KIAS—Knots Indicated Airspeed

KTAS—Knots True Airspeed

MAC—Mean Aerodynamic Chord

MAJCOM—Major Command

MAP—Missed Approach Point

MARSA—Military Assumes Responsibility for Separation of Aircraft

MDA—Minimum Descent Altitude

MFD—Multi-Functional Display

MITO—Minimum Interval Takeoff

MOAs—Military Operating Areas

MRR—Minimum Runway Required

MSA—Minimum Safe Altitude

MSL—Mean Sea Level

N/A—Not applicable

NAF—Numbered Air Force

NM—Nautical Miles

NVG—Night Vision Goggles

OAS—Offensive Avionics System

ONC—Operational Navigation Charts

OT&E—Operational Test and Evaluation

OG/CC—Operations Group Commander

OPR—Office of Primary Responsibility

ORI—Operational Readiness Inspection

PAR—Precision Approach Radar

PECP—Primary Entry Control Point

PIREP—Pilot Report (Weather)

PMSV—Pilot to Metro Service

PPI—Plan Position Indicator

PTA—Planned Time of Arrival

PTAIP—Primary Terrain Avoidance Initiation Point

RAPCON—Radar Approach Control

RCO—Range Control Officer

RCR—Runway Condition Reading

RNP—Required Navigation Performance

RVCP—Rendezvous Control Point

RVCT—Rendezvous Control Time

RVIP—Rendezvous Initial Point

SIF—Selective Identification Feature

SIGMET—Significant Meteorological Information

SMA—Start Maneuver Area

SOF—Supervisor of Flying

SPINS—Special Instructions

STV—Steerable Television

TA—Terrain Avoidance

TACAN—Tactical Air Navigation system

TAL—Transfer ALignment

TDZ—Touchdown Zone

TERPs—Terminal Instrument Procedures

TOT—Time over Target

TSO—Target Study Officer

TDY—Temporary Duty

UHF—Ultra High Frequency

VASI—Visual Approach Slope Indicator

VFR—Visual Flight Rule

VHF—Very High Frequency

VMC—Visual Meteorological Conditions (5BW)

VR—VFR Military Training Route

Terms

Alternate Entry Control Point (Alternate Entry Fix)—The route point(s) upon which a control time for an alternate entry into the route is based.

Climbout Track—A track on a bomber IR, normally associated with the TA Termination point. Permits a climbing departure to the Exit Fix.

Critical Phases of Flight—Takeoff, air-to-air refueling, inert or live weapon deliveries, tactical maneuvering when bank angle exceeds is planned to exceed 45 degrees, low altitude flight, emergencies (real or simulated), initial buffet demonstration, and landing. Fighting Wing formation is not close formation and is not considered a Critical Phase of Flight.

End Maneuver Area (EMA)—A control point terminating the bomb run area.

Entry Control Time—The scheduled time over the Primary/Alternate Entry Control Point.

Entry Track—A track, usually associated with a bomber IR and beginning at the Primary or alternate Entry Point, along which descent is made to the low altitude portion of the route.

Low Altitude Navigation Leg—The route segments of a bomber IR between the TA Initiation Point and TA Termination Point. For non-bomber IRs, the low altitude navigation leg is that portion of the route designed primarily for low altitude flight; does not include segments intended for descent into and climbout from the route.

Man-Made Obstructions—Structures which present a hazard to flight. Structure height is measured from the groundbase.

Mission Employment Area—Areas used to conduct training in weapons employment, tactics, low altitude navigation, threat avoidance, intercepts, and other areas directly related to B-52 employment. These areas include, but are not limited to, IR and VR routes, MOAs, ranges, and Restricted/Warning Areas.

Non-MASMS IR Route—A route in which scheduling activity in AP/1B is other than Det 1, HQ ACC/ DOSR.

Primary /Alternate Exit Point—The final waypoint published in FLIP for the primary or alternate exit route. For bomber IRs, the final point on the climbout track. For other routes, may coincide with the final TA Termination Point.

Primary/Alternate TA Initiation Point (Initial/Start TA)—The waypoint at which aircrew are authorized to begin TA operations.

Primary/Alternate TA Termination Point (Final/End TA)—The point which denotes the end of TA operations.

Primary Entry Control Point (PECP)—Referred to as the Entry Fix. The route point upon which a control time for route entry is based.

Range Control Officer (RCO)—RCO or other range control personnel qualified to issue release clearance, confirm weapon release, or authorize use of jettison/salvo areas.

Reentry Track—A track, commencing at the end of a Maneuver Area, on which low altitude re-entry to the route can be achieved to execute additional bomb/ECM/AGM runs.

Route Width (Route Perimeter)—The route boundary limits within which aircraft are restricted to conduct operations.

Start Maneuver Area (SMA)—The point that defines the start of the bomb run area. Timing control must be within applicable tolerances.

Squadron Top—3--Squadron ADO, DO, CC.

Terrain Avoidance (TA)—Method of maintaining ground clearance by Terrain Trace, EVS, or Radarscope Interpretation as close the terrain as equipment, command directives, and crew judgment allow.

TA Visual Conditions—Weather conditions that permit aircraft operations clear of clouds, provide the pilots visual contact with the ground, and three miles forward visibility.

Visual Contour Flight—Operation at a predetermined altitude above the ground, following contours visually using the FLIR/STV with radar altimeter crosscheck. An operating radar altimeter is required.

Attachment 2

BRIEFING GUIDES

NORMAL BRIEFING GUIDE

A2.1. CREW EMPLOYMENT BRIEFING. Note: Ensure the majority of time is used for discussion of tactics, complicated mission segments/special activities, and other new or important items. If regular briefing items have already been discussed during mission planning or are standard, specialty checklist items, they may be reviewed briefly or omitted as appropriate.

A2.1.1. **OVERVIEW**

A2.1.1.1. Roll call, security classification

A2.1.1.2. Mission overview, priorities & WX

A2.1.2. **GROUND OPERATIONS**

A2.1.2.1. Flow, timing, communications

A2.1.2.2. A/C status, parking

A2.1.2.3. T/O & abort procedures

A2.1.3. **DEPARTURE**

A2.1.3.1. L/O altitudes, airspeeds, routing

A2.1.3.2. Checklists, crew coordination, action points

A2.1.4. **INGRESS**

A2.1.4.1. Routing

A2.1.4.2. Check-in, modes & codes, EMCON

A2.1.4.3. Threats, tactics, support and package

A2.1.4.4. Checklists, crew coordination, action points

A2.1.4.5. Low Altitude Employment: Timing, descent procedures

A2.1.5. **TGT AREA/WEAPON DELIVERY**

A2.1.5.1. Target description, weapons and fuse combinations

A2.1.5.2. Release: method, parameters, tolerances

A2.1.5.3. Threats, Commit Criteria, maneuvers, expendables, coordination

A2.1.5.4. SPINS, Go/No-Go

A2.1.6. **EGRESS**

A2.1.6.1. Routing, Comm, modes & codes

A2.1.6.2. Low Alt: climb-out and abort procedures

A2.1.7. **AIR REFUELING**

A2.1.7.1. Call signs, tanker type, track, base altitude

A2.1.7.2. Comm plan, RZ type, EMCON option

A2.1.7.3. Timing, planned onload

A2.1.7.4. RZ overrun and breakaway procedures

A2.1.7.5. Missed/delayed AR options

A2.1.8. **RECOVERY**

A2.1.8.1. WX, IAF time, fuel, landing time

A2.1.8.2. FLIP approach & pattern activity

A2.1.9. **MISCELLANEOUS**

A2.1.9.1. Recall, alternate missions

A2.1.9.2. WX alternate, divert procedures

A2.1.9.3. SUAS, high terrain, emergency airfields

A2.1.9.4. ICAO, strange fields, customs

A2.1.10. **ADMINISTRATIVE**

A2.1.10.1. Qualifications, currencies, Go/No-Go

A2.1.10.2. Clothing requirements, SII

A2.1.10.3. Crew rest start, show time

A2.1.10.4. Safety of flight, flight discipline

A2.1.10.5. Dash 1 prep for flight checklist

A2.2. FORMATION BRIEFING GUIDE. This minimum briefing guide is provided as an example to stress mission events and objectives rather than reinforce technical order procedures. A standardized briefing format is especially important when flying with other units. Brief only actions required to meet mission and EMCON objectives. If regular briefing items have already been discussed during mission planning or are standard, specialty checklist items, they may be reviewed briefly or omitted as appropriate.

A2.2.1. **TIME HACK**

A2.2.2. **ROLL CALL**

A2.2.2.1. FL, ML, MC

A2.2.2.2. Tail numbers, parking spots

A2.2.3. **MISSION OVERVIEW/TIMING:**

A2.2.3.1. CC Intent, Objectives, ALR, DLOs

A2.2.3.2. Step time

A2.2.3.3. Start engines

A2.2.3.4. Taxi & takeoff

A2.2.3.5. Rendezvous

A2.2.3.6. Range time

A2.2.3.7. IAF landing

A2.2.3.8. Late T/O, priorities

A2.2.3.9. Plan for delayed/broken aircraft, downloading weapons, mid-mission rejoins

A2.2.4. **WEATHER**

A2.2.5. **COMMUNICATIONS**

A2.2.5.1. EMCON plan

A2.2.5.2. Formation check-in

A2.2.5.3. HAVEQUICK, Secure Voice

A2.2.6. **TAXI**

A2.2.6.1. Taxi sequence / Spacing

A2.2.6.2. Active runway

A2.2.7. **TAKEOFF**

A2.2.7.1. Interval

A2.2.7.2. Performance data

A2.2.7.3. Abort call(s)

A2.2.7.4. Emergencies—route, alt, A/S, etc.

A2.2.8. **COMM**

A2.2.8.1. ATC clearance

A2.2.8.2. IFF/SIF

A2.2.8.3. Lost comm.

A2.2.9. **DEPARTURE**

A2.2.9.1. Routing & visual cutoff

A2.2.9.2. Airspeed & power settings

A2.2.9.3. Intermediate level-off

A2.2.9.4. Turns / bank angle

A2.2.9.5. A/A TACAN (IMC)

A2.2.10. **LEVEL-OFF / CRUISE**

A2.2.10.1. Altitude (stack up/down)

A2.2.10.2. Briefed airspeed

A2.2.10.3. Overrun procedures

A2.2.10.4. Airspeed changes

A2.2.10.5. Turns / bank angle

A2.2.10.6. Climbs / descents

A2.2.10.7. DESC / FIC

A2.2.10.8. Lead changes

A2.2.10.9. FENCE check(s)

A2.2.11. **AIR REFUELING**

A2.2.11.1. Call signs & track

A2.2.11.2. Altitude block / base

A2.2.11.3. Rendezvous type

A2.2.11.4. AR control time

A2.2.11.5. Frequencies

A2.2.11.6. A/A TACAN

A2.2.11.7. Onload

A2.2.11.8. Overrun procedures

A2.2.11.9. Breakaway—practice / unplanned

A2.2.11.10. End AR

A2.2.11.11. Priorities / training requirements

A2.2.12. **LOW LEVEL (As required)**

A2.2.12.1. Route

A2.2.12.2. PECP time / range time

A2.2.12.3. Weather update

A2.2.12.4. Spacing (seconds / NM)

A2.2.12.5. Briefed A/S

A2.2.12.6. Target area ops

A2.2.12.7. Ingress / Egress plan

A2.2.12.8. Planned tactics vs. threats

A2.2.12.9. AC separation / frag deconfliction

A2.2.12.10. Package support

A2.2.12.11. Exit procedures & join-up

A2.2.12.12. Exit time

A2.2.12.13. Low level abort plan

A2.2.13. **HI LEVEL BOMBING**

A2.2.13.1. ESS/ECM callsign & frequency

A2.2.13.2. IP & TOT times

A2.2.13.3. Aircraft spacing

A2.2.13.4. Briefed A/S

A2.2.13.5. Weather

A2.2.13.6. Ingress & Egress plan (rejoin)

A2.2.13.7. Planned tactics vs. threats

A2.2.13.8. Maneuver plan (welded wing, independent, supportive)

A2.2.13.9. Threat reactions/maneuvers

A2.2.13.10. Weapons type & release parameters

A2.2.13.11. AC separation / weapons deconfliction

A2.2.13.12. Package support

A2.2.14. **RECOVERY**

A2.2.14.1. Breakup

A2.2.14.2. Penetration and approach

A2.2.15. **MISC SUBJECTS**

A2.2.15.1. Lost wingman

A2.2.15.2. FIE procedures

Attachment 3

STRANGE FIELD FAMILIARIZATION

A3.1. Procedures for Flights Into Strange Airfields. The following procedures aid crewmembers in their preparation for flights into strange airfields. This outline is a guide and crewmembers should review only the information that is appropriate to their mission (for example, load bearing capacity need not be reviewed for flights into airfields with similar aircraft).

A3.1.1. During mission planning, crews should review the following information for each base of intended landing:

A3.1.1.1. **FLIP Enroute Supplement:**

A3.1.1.1.1. Traffic pattern/special practices

A3.1.1.1.2. Navaids maintenance periods

A3.1.1.1.3. Facilities/services available

A3.1.1.1.4. Load bearing capacity

A3.1.1.2. **FLIP Planning Documents:**

A3.1.1.2.1. Special notices

A3.1.1.2.2. Preferred routing

A3.1.1.2.3. Terminal Control Areas

A3.1.1.2.4. International Civil Aviation Organization (ICAO) information

A3.1.1.3. **Approach Plates:**

A3.1.1.3.1. Airfield layout/obstacles/runway length and width

A3.1.1.3.2. Final approach runway alignment

A3.1.1.3.3. Airfield lighting

A3.1.1.3.4. Navigation chart (review for local terrain features and ARDA considerations)

A3.1.2. Before departure from each base, crews may use the following guide as a means of reviewing the arrival/approach procedures for the next intended landing base:

A3.1.2.1. **Departure:**

A3.1.2.1.1. Obstacles

A3.1.2.1.2. Rate of climb required

A3.1.2.1.3. Emergency/minimum safe altitudes

A3.1.2.1.4. Routing/navaids/altitude restrictions

A3.1.2.2. **Enroute Descent:**

A3.1.2.2.1. Start descent point

A3.1.2.2.2. Rate of descent required

A3.1.2.2.3. Transition altitude

A3.1.2.2.4. Terminal fix (IAF, FAF, Procedures turn fix, PAR, etc.)

A3.1.2.2.5. Lost communications procedures

A3.1.2.2.6. Emergency/minimum safe, sector altitudes

A3.1.2.3. **Published Penetration:**

A3.1.2.3.1. IAF/holding fix

A3.1.2.3.2. Initial rate of descent required

A3.1.2.3.3. Transition altitude

A3.1.2.3.4. Altitude restrictions

A3.1.2.3.5. Emergency/minimum safe altitudes

A3.1.2.3.6. Final approach fix

A3.1.2.3.7. Lost communications procedures

A3.1.2.4. **Final Approach—Published or Radar:**

A3.1.2.4.1. Rate of descent

A3.1.2.4.2. Timing

A3.1.2.4.3. Weather minimums/MDA/DH

A3.1.2.4.4. Missed approach procedures

A3.1.2.4.5. Lost communications procedures

A3.1.2.4.6. Transition to landing/runway environment

Attachment 4

DATA TRANSFER UNIT CARTRIDGE IDENTIFICATION AND HANDLING PROCEDURES

The following procedures apply for the use of Data Transfer Cartridges (DTCs).

A4.1. Identification of Classified DTCs. Mark the DTC in plain English language with the following:

A4.1.1. Security classification in the color codes:

A4.1.1.1. TOP SECRET: Orange

A4.1.1.2. SECRET: Red

A4.1.1.3. CONFIDENTIAL: Blue

A4.1.1.4. UNCLASSIFIED: Green

A4.1.2. Review/declassification instructions

A4.1.3. Control number

A4.1.4. Creation date

A4.1.5. Sortie IDs (Full 28 character ID for EWO sorties and any variation of the 28 characters available from training missions)

A4.2. Identification of Unclassified DTCs. Mark the DTC in plain English language with the following:

A4.2.1. White color coded unclassified marking (New unclassified DTCs to be used as flight data recorders and will record classified data in the course of the mission may be marked with the appropriate classification level before issuing to crews).

A4.2.2. Control number

A4.2.3. Creation date

A4.2.4. Sortie ID(s)

A4.3. Aircraft Computer Downloading. Erase classified mission data from the aircraft computer when the mission/alert period is terminated. Make an annotation in the respective AFTO Form 781, section C, that the classified data has been removed. Remove DTCs from the aircraft.

A4.4. OAS Classified Data. Erasure of OAS classified data is not required for normal training or ORI missions, if landing at a USAF base. In cases of weather diverts, emergencies, air shows, etc., aircrews will ensure compliance with DOD 5200.1R/AFR 205-1 regarding safeguarding of classified equipment on aircraft. Follow special instructions that direct classified data erasure on specified HHD missions.