

**BY ORDER OF THE  
SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 11-235**

**31 MAY 2019**



**Flying Operations**

**SPECIALIZED FUELING OPERATIONS**

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OPR: AFSOC/A3TW

Certified by: AF/A3T  
(Maj Gen Scott F. Smith)

Supersedes: AFI11-235, 8 April 2015

Pages: 37

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This instruction implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations* and Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*. This publication applies to all uniformed members and civilian employees of the Regular Air Force, Air Force Reserve and Air National Guard involved in Forward Area Refueling Point Operations, Wet Wing Defueling Operations, Hot Refueling Operations, Cold to Cold Aircraft Fueling, and Aerial Bulk Fuel Delivery System Operations. Units may supplement this instruction to outline local procedures and precautions for Specialized Fueling Operations (SFO) necessitated by local conditions, and responsibilities of supporting functional areas. Forward supplements to Air Force Special Operations Command/Weapons and Tactics (AFSOC/A3TW) and applicable parent Major Command (MAJCOM) SFO manager. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule

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### ***SUMMARY OF CHANGES***

This document has been substantially revised and must be completely reviewed. Major changes include: changed publication title to Specialized Fueling Operations; defined Forward Area Refueling Point, Wet Wing Defueling, Hot Refueling, Cold to Cold Aircraft Fueling , and Aerial Bulk Fuel Delivery System to align with T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*; updated Forward Area Refueling Point survey requirements; added Wet Wing Defueling Operations chapter; added Hot Refueling Operations chapter; added Aerial Bulk Fuel Delivery System Chapter; updated Forward Area Refueling Point survey distance criteria in [Table A2.1](#) and; updated typical Forward Area Refueling Point Diagrams.

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## Chapter 1

### SPECIALIZED FUELING OPERATIONS (SFO) OVERVIEW

**1.1. Overview.** Units selected by their Major Command (MAJCOM) will certify aircrews and ground support personnel for Specialized Fueling Operations (SFO) using the guidance in this instruction. (T-2).

#### 1.1.1. Specialized Fueling Operations:

1.1.1.1. Forward Area Refueling Point (FARP). The overall mission with the primary purpose of transferring fuel from a tanker aircraft into a receiver aircraft, with engine(s) running on either the tanker and/or receiver aircraft.

1.1.1.1.1. Sister service doctrine defines FARP as Forward Arming and Refueling Point. This publication does not address arming procedures or arming survey requirements, FARP is defined as Forward Area Refueling Point for AFI 11-235 purposes.

1.1.1.2. Wet Wing Defueling (WWD). An operation for providing fuel from a tanker aircraft with one or more engines running into System Safety Engineering Analysis (SSEA) approved fuel support equipment, not an aircraft.

1.1.1.3. Hot Refueling. The transfer of fuel from a non-aircraft source (e.g. R-11 or approved fuel support equipment) into an aircraft having one or more engines running. The Hot Refueling procedures in this AFI only apply when operations and fuels personnel are performing the operation with no maintenance personnel.

1.1.1.4. Cold to Cold Aircraft Fueling. The transfer of fuel between two aircraft with no engines running. This operation is conducted IAW MAJCOM guidance. The Cold to Cold Aircraft Fueling procedures in this AFI only apply when operations and fuels personnel are performing the operation with no maintenance personnel.

1.1.1.5. Aerial Bulk Fuels Delivery System (ABFDS). The transfer of fuel from palletized bladders that are transported by a cargo aircraft into a storage conveyance, or when equipped with Alternate Capability Equipment (ACE), into an aircraft. Conduct this operation in accordance with T.O. 00-25-172.

**1.2. Waivers.** Waiver authority for the contents of this instruction during exercises and training is MAJCOM/CC and may be delegated to A3 unless specifically noted within this publication. The MAJCOM processing the waiver will coordinate with all participating MAJCOMs possessing aircraft, equipment, and personnel involved in the SFO operation. During combat operations, contingencies, and inspections, waiver authority for operational procedures specified in this instruction is the Air Component Commander exercising Operational Control (OPCON) authorities over subordinate forces.

## Chapter 2

### ROLES AND RESPONSIBILITIES

#### 2.1. MAJCOM A3, Operations Directorate (applicable only if executing SFO).

- 2.1.1. Manage SFO when maintenance personnel are not involved, including establishing procedures and developing checklists. (T-2).
- 2.1.2. Establish a headquarters team to perform command certification of SFO training programs and initial cadre of personnel. Areas to be certified will include all classroom familiarization training, and hands on training established by this instruction and MAJCOM guidance. The team chief will be a representative from MAJCOM/A3. Members should include MAJCOM representatives from Operations, Logistics (Fuels) and Safety. Additional members are included at the discretion of the team chief. (T-2).
- 2.1.3. Evaluate compliance with servicing checklist procedures, conduct inspections of fuel servicing equipment, and review applicable support agreements. (T-2).
- 2.1.4. A unit is normally command certified only once. Upon receipt of different aircraft or if existing servicing procedures change drastically, then MAJCOM/A3's designated OPR will determine if recertification or additional training are required. (T-2).
- 2.1.5. Request SSEA and coordinate accomplishment of the analysis with Air Force Life Cycle Management Center (AFLCMC)/SES. (T-2).
- 2.1.6. Assist in accomplishing SSEAs and oversee implementation of recommendations. (T-2).
- 2.1.7. Maintain a case file of SSEA reports. (T-2).
- 2.1.8. Disseminate SSEA reports to subordinate organizations as appropriate. (T-2).
- 2.1.9. Assist in development and technical evaluations of fuel servicing procedures and support equipment in coordination with AFSOC/A4RE. (T-2).
- 2.1.10. Forward SSEA related checklists to AFLCMC/SES. (T-2).
- 2.1.11. Review SFO training programs. (T-2).
- 2.1.12. Periodically evaluate units SFO capabilities during scheduled MAJCOM/Numbered Air Force inspections and no-notice visits. Do not inspect other MAJCOM assigned units without affected MAJCOM/A3 approval. (T-2).
- 2.1.13. AFSOC/A3TW will approve all FARP site certifications within two weeks of submission and maintain the master listing of all approved FARP surveys. (T-2).
- 2.1.14. Identify, evaluate, and procure equipment to improve SFO in association with AFSOC/A4RE. (T-2).
- 2.1.15. Coordinate SFO with other MAJCOMs and services. **Note:** Units conducting SFO will be responsible for any cost incurred for cleanup and taxiway/runway repairs directly related to fuel spills as a result of their SFO operations. (T-2).

2.1.16. Approve respective training programs, develop and distribute classroom training material, and provide guidance for initial and continuation training in appropriate instructions. **(T-2).**

2.1.17. Coordinate fuel support with AFSOC/A4RE. **(T-2).**

**2.2. MAJCOM Safety, Chief of Safety (applicable only if executing SFO).** Augment certification and inspection teams, when required. **(T-2).**

**2.3. MAJCOM Inspector General, Inspector General (applicable only if executing SFO).** Include SFO operations in inspection scenarios for appropriate units at MAJCOM discretion. **(T-2).**

**2.4. MAJCOM Civil Engineering Divisions (applicable only if executing SFO).** Provide technical assistance for the certification of proposed SFO sites. **(T-2).**

2.4.1. Provide guidance for SFO fire protection requirements as prescribed in T.O. 00-25- 172, and AFI 32-2001, *Fire Emergency Services Program*. **(T-2).**

**2.5. AFSOC/A4RE.**

2.5.1. Assist MAJCOM/A3s in the management of all SFO, including establishing procedures, development of appropriate checklists, FARP site survey approval, and waivers. **(T-2).**

2.5.2. Ensure command to command agreements are developed and updated periodically to cover all FARP requirements. Include at a minimum: personnel requirements, equipment inspections and maintenance, fuel support, and training requirements. **(T-2).**

2.5.3. Develop policy/update, and monitor the training program and assist with procurement of equipment for Air Force Specialty Code (AFSC) 2F0X1 Hose Deployment Personnel (HDP). **(T-2).**

2.5.4. Manage AFSC 2F0X1 HDP personnel positions that are AFSOC/Air Mobility Command (AMC) Program Element Coded to each host fuels flight for FARP activities. **(T-2).**

2.5.5. Augment inspection teams and provide technical evaluation of equipment, checklists, and training programs. **(T-2).**

2.5.6. Serve as approval authority for deployment of AFSOC owned fuels resources. Air Force Installation Mission Support Center, in coordination with the Air Force Petroleum Office (AFPET), is approval authority for deployment of Air Combat Command (ACC) owned fuels resources. **(T-2).**

2.5.7. Assist in development and technical evaluations of fuel servicing procedures and support equipment in coordination with MAJCOM SES. **(T-2).**

2.5.8. Assist in the technical evaluation of new refueling equipment. **(T-2).**

2.5.9. Serve as the command focal point for refueling equipment and complete reports in accordance with AFI 23-201. **(T-2).**

2.5.10. Assist MAJCOM A3s in the management of all wet wing defueling equipment and coordination with host unit Fuels Management Flight. **(T-2).**

2.5.11. Provide guidance to applicable fuels management flights on proper storage, maintenance and reconstitution of wet wing defueling equipment. (T-2).

**2.6. AFLMC/SES.** Manages SSEAs and T.O. 00-25-172. (T-2).

**2.7. Special Tactics.**

2.7.1. Provide team members for FARP site surveys. (T-3). Combat Control and graduates of an AFSOC certified surveyor course will conduct FARP site surveys utilizing the criteria listed in this publication. (T-3).

2.7.2. Provide Air Traffic Control (ATC) services at FARP sites when conventional ATC services are not available. (T-3). Make every effort to include ST in FARP operations. (T-3). When ST is involved in FARP operations, they are in charge of all aircraft movement in and around the FARP site to include marshaling of aircraft, positioning and repositioning to and from their holding site, and FARP points. (T-3).

2.7.3. Provide FARP surveyor training and certification to military and civilian General Schedule (GS) employees, contractors, and/or temporary contractors hired by Department of Defense (DoD) to perform survey specific duties. ST and qualified surveyors will accomplish refresher training every 24 months. (T-3).

**2.8. Wings/Groups.**

2.8.1. Establish an OPR for all SFO. (T-3). The OPR must be actively involved in SFO. Inform parent MAJCOM SFO manager of assigned OPR. (T-3).

2.8.2. Organize a base site certification team to perform permanent FARP site surveys and other SFO site certifications IAW MAJCOM guidance. (T-3).

2.8.3. Ensure a continuation training and certification program for unit personnel is established IAW MAJCOM guidance. (T-2).

2.8.4. AMC Operations Group Special Operations (OGS) units will program and fund Temporary Duty (TDY) expenses for fuels personnel supporting bilateral and multilateral FARP training operations when the host unit participates. (T-3).

**2.9. Designated Units.**

2.9.1. Establish an OPR for SFO. The OPR must be actively involved in SFO. Inform wing/group of assigned OPR. (T-3).

2.9.2. Maintain a continuation training and certification program for unit personnel. (T-2).

2.9.3. Identify SFO site requirements and forward to wing/group OPR. (T-3).

**2.10. Fuels Management Flight (FMF).**

2.10.1. FMF's identified by AFSOC/A4RE as wet wing defueling custodians will maintain equipment IAW T.O. 42B-1-1, *Quality Control of Fuels*, T.O. 37A-1-101, *General Instructions, USAF Fuel, Water and Lubricant Dispensing Equipment*. (T-2).

2.10.2. Ensure only approved equipment is used for wet wing defueling operations. (T-2). Submit deviation thru AFSOC/A4RE ([AFSOC.A4REE.DL@US.AF.MIL](mailto:AFSOC.A4REE.DL@US.AF.MIL)) for approval. (T-2).



2.10.3. Maintain equipment in a deployment ready posture, and develop procedures to issue equipment to aircrew personnel when tasked. **(T-2)**.

2.10.4. Ensures aircrew personnel provide a debrief to the FMF on WWD equipment performance and condition. **(T-3)**. If applicable, FMF will report incidents IAW AFI23-201 *Fuels Management*. **(T-3)**.

2.10.5. FMF will report equipment status to AFSOC/A4RE NLT 1 June annually. **(T-2)**.

## **2.11. FARP Fuels Personnel.**

2.11.1. Fuels FARP program managers will report personnel and equipment status to AFSOC/A4RE, as outlined below. **(T-2)**. Report shortfalls to higher headquarters by after action report with recommended corrective actions to AFSOC/A4RE. **(T-2)**.

2.11.2. Report FARP equipment status: type, quantity, number on hand, and number on order. **(T-2)**. FARP units will submit this report to AFSOC/A4RE by the first Thursday of each month. **(T-2)**.

2.11.3. AF Form 4132, *FARP Hose Deployment Personnel Training Report*. Use this form or digital equivalent to track personnel FARP training. **(T-2)**. Units will submit a weekly report to AFSOC/A4RE identifying training status of FARP personnel and equipment status. **(T-2)**. Unit FARP program manager will maintain the original/signature copy of AF Form 4132 or digital equivalent for each of their unit's FARP team members and update as required. **(T-2)**.

2.11.4. AF Form 4134, *Forward Area Refueling Point (FARP) Budget Requirement*. AFSOC units must adhere to wing and group due dates for Major Force Program-11 (MFP-11) funding. Complete a summarized report of budget requirements, equipment maintenance, TDY, personnel equipment, and other miscellaneous items. AFSOC units will submit this report annually to wing or group Resources Advisers and courtesy copy AFSOC/A4RE. AMC units will submit this report directly to AFSOC/A4RE annually by 1 Jun. ACC units will submit this report annually to group/wing resource advisors and courtesy copy ACC/A3JO. Complete the AF Form 4134 IAW AFI 23-201, *Fuels Management*. **(T-2)**.

## Chapter 3

### FORWARD AREA REFUELING POINT OPERATIONS

**3.1. FARP.** An operation which involves transferring fuel from a tanker aircraft into a receiver aircraft, with engine(s) running on either the tanker and/or receiver aircraft. This operational capability is typically performed by AFSOC, AMC Special Operations Low-Level (SOLL) II, and ACC Personnel Recovery (PR) and requires specialized equipment and personnel. FARP is normally conducted in austere conditions and under the cover of night. Only qualified AFSC 2F0X1 personnel with Special Equipment Identifier (SEI) 035 (IAW Air Force Enlisted Classification Directory) may serve as Hose Deployment Personnel when issuing into hot aircraft. AFSC 2F0X1s with SEI 369 may substitute for 035 SEI personnel when issuing from a hot aircraft into a cold aircraft. A list of approved tanker and receiver aircraft used in conducting FARP operations is available in T.O. 00-25-172.

**3.2. Requirements.** SFO supporting personnel will ensure a review of the following is accomplished prior to aircraft employment in FARP operations: **(T-2)**.

3.2.1. AFLCMC/SES performs the SSEA of the operation in coordination with the MAJCOM safety office. Reference T.O. 00-25-172 and AFI 91-202, *The US Air Force Mishap Prevention Program*. AFLCMC/SES is the approval authority for SSEA reports.

3.2.2. Technical data for performing these operations, including appropriate aircrew procedural checklists, are written, validated (validation often occurs in association with the SSEA), and published.

3.2.3. The requirements of **Paragraph 3.2.1** are completed for designated unit aircraft type.

3.2.4. Completion and certification of FARP site.

3.2.5. MAJCOM certification of unit training program.

3.2.6. MAJCOM certification of initial cadre personnel performing FARP operations.

### **3.3. FARP Site Certification.**

3.3.1. FARP sites that are considered expired upon the release of this publication IAW **para 3.3.2** and **3.3.3** are grandfathered for a one year extension. If allowing a re-survey or reassessment minimizing impact to operational requirements. Surveys will expire on their expiration date as found in the Talon Point database if not considered expired by the date of release of this publication.

3.3.1.1. FARP Site Types. FARP sites fall into two categories: permanent and temporary. Both sites require certification prior to FARP operations. **(T-2)**. Exercise planners will ensure certification of proposed FARP sites prior to start of exercise. **(T-2)**. Permanent and temporary site reassessment will be accomplished by an operations group level or above FARP qualified Tactics or Evaluator Loadmaster/Special Mission Aviator (SMA) or ST/ST-certified surveyor. On scene reassessment should be utilized unless mission requirements dictate otherwise. If other means of reassessment are used annotate in block 30L of the AF 4066 (e.g., ISR imagery review, airfield management confirmation of site, current imagery, etc.). **(T-2)**.

3.3.1.2. Unit requesting a FARP survey will perform the initial coordination with the airfield manager before the site survey team departs to accomplish the certification. **(T-3)**.

3.3.1.3. All Specialized Fueling Operations may be conducted on a FARP surveyed site.

3.3.2. Permanent Sites. The using MAJCOM/Wing/Group will send a FARP certification team to conduct an on-scene site survey to certify the proposed site. **(T-2)**. **Note:** Permanent FARP surveys expire 5 years after date of survey (block 4 of AF Form 4066). Permanent surveys may be reassessed for an additional 5 years provided reassessment is conducted before the survey expiration date and there are no changes to blocks 30 A-J of Form 4066. Permanent surveys exceeding the 5 year certification without being reassessed are expired and will require a new survey. Permanent surveys may only be extended to 10 years beyond the initial survey date before a resurvey will be required. Units will forward surveys for MAJCOM approval not later than 45 days from the date of survey (block 4 of the AF 4066). **(T-2)**. Permanent surveys and reassessments will be generated thru Talon Point, NIPR: [<https://www.gz-db.org>] SIPR: [<https://talonpoint.snlca.nro.smil.mil/TalonPoint/home.xhtml>]. If the Talon Point database is unavailable, contact AFSOC/A3TW [[AFSOCA3.TalonPoint.TalonPoint@us.af.mil](mailto:AFSOCA3.TalonPoint.TalonPoint@us.af.mil)] for assistance. **(T-2)**.

3.3.2.1. The permanent site certification team will consist of the following: **(T-3)**.

3.3.2.1.1. ST or ST-certified FARP surveyor.

3.3.2.1.2. A FARP qualified loadmaster/ SMA with extensive knowledge of FARP operations and procedures.

3.3.2.1.3. A safety member from the unit or host safety office familiar with refueling safety requirements and aircraft taxi operations.

3.3.2.1.4. A FARP qualified 2F0X1 knowledgeable of requirements and equipment.

3.3.2.1.5. A member from the host Airfield Management Office, familiar with aircraft ramp requirements, airfield safety, and clearance criteria.

3.3.2.1.6. A representative from the host Environmental Management Office that is familiar with local environmental requirements and concerns.

3.3.2.1.7. A host fire chief or senior fire representative familiar with aircraft crash, rescue and fuel servicing fire protection requirements.

3.3.3. Environmental Impact Analysis (Permanent Site).

3.3.3.1. Continental United States (CONUS) Sites. Send AF Form 813, *Request for Environmental Impact Analysis*, or sister service equivalent, to the installation environmental planning function as early in the site selection process as possible. **(T-3)**.

3.3.3.2. Overseas Sites. Complete AF Form 813 or host country equivalent. **(T-3)**. Reference the Foreign Guidance Standards, Status of Forces Agreement, treaties and/or Overseas Baseline Guidance Document, in completing the AF Form 813. **(T-3)**. At a minimum, the airfield manager will certify using a memorandum of agreement (MOA) that all local environmental standards and criteria have been met. Attach MOA with Talon Point submission. **(T-3)**.

3.3.4. Temporary Sites. Temporary sites allow site certification and use for specific exercises, contingencies and bare base operations and must be annotated in block 30J of the AF 4066. **(T-2). Note:** Temporary FARP surveys must be used within 1 year of date of MAJCOM approval (block 4 of AF Form 4066). **(T-2).** Temporary FARP surveys expire 2 years after date of MAJCOM approval (block 16 of AF Form 4066). Surveys may be reassessed for an additional 1 year provided the reassessment is conducted before the expiration date and there are no changes to blocks 30A-J of the AF Form 4066. If a temporary survey is required for use after the 3 year expiration a permanent survey must be accomplished. **(T-2).** Units will forward surveys for MAJCOM approval not later than 45 days from the date of survey (block 4 of the AF 4066). **(T-2).** Temporary site reassessment will be accomplished by an operations group level or above FARP qualified Tactics or Evaluator Loadmaster/Special Mission Aviator (SMA) or ST/ST-certified surveyor. **(T-2).** Temporary surveys and reassessments will be generated thru Talon Point, NIPR: [<https://www.gz-db.org>] SIPR: [<https://talonpoint.snica.nro.smil.mil/TalonPoint/home.xhtml>]. **(T-2).** If the Talon Point database is unavailable, contact AFSOC/A3TW [[AFSOCA3.TalonPoint.TalonPoint@us.af.mil](mailto:AFSOCA3.TalonPoint.TalonPoint@us.af.mil)] for assistance. **(T-2).**

3.3.4.1. The temporary site certification team will consist of the following: **(T-3).**

3.3.4.1.1. ST or ST-certified FARP surveyor and a FARP qualified loadmaster/SMA with extensive knowledge of FARP operations. If available, include a FARP qualified 2FOX1 knowledgeable of requirements and equipment. **NOTE:** for contingency operations if force protection measures dictate, the Loadmaster and 2FOX1 personnel are not required. Annotate in block 30L of the AF 4066. **(T-2).**

3.3.4.2. The temporary site certification tasks will consist of the following: **(T-3).**

3.3.4.2.1. The survey team will coordinate with the airfield manager or their designated representative for site survey requirements.

3.3.4.2.2. The survey team will coordinate with the host fire chief or senior fire department representative familiar with aircraft rescue and fuel servicing fire protection requirements.

3.3.4.2.3. Environmental Impact Analysis (Temporary Site). The airfield manager will confirm that all local environmental standards and criteria have been met.

3.3.5. FARP Layout. The survey author will ensure:

3.3.5.1. Fuel Servicing Safety Zone (FSSZ) is 50 feet of a pressurized fuel servicing component and 25 feet around fuel vent outlets of aircraft. Follow **Table A2.1** for additional minimum distances. **(T-2).**

3.3.5.2. When able, consider positioning tanker aircraft 45° off centerline on unimproved surfaces. This should reduce engine blast sustained by the Hot Refueling Supervisor (HRS), HDPs and receiver aircraft.

3.3.5.3. Make every effort to position FARP equipment and refueling points on hard surfaces. Mission scenario and FARP site location will dictate placement of FARP equipment and refueling points. Reference **attachments 3** through **8** for example FARP site layouts in development of macro and micro diagrams. **(T-3).**

3.3.5.4. Certify site for the largest type tanker aircraft and the maximum number of refueling points the site can support. **(T-3)**. Consider the length, width and weight bearing capacity of runway and FARP site. **(T-3)**. Surveyed sites may be utilized for receivers with left or right side located single point refueling panel (SPR) provided aircraft can be safely taxied into position and maintain required egress distances.

3.3.5.5. Certify site for the largest type receiver aircraft per point. **(T-2)**. Consider the V-22 as the largest rotary/tiltrotor receiver aircraft. **(T-2)**. Submitted diagrams will use largest receiver in site micro and macro diagrams. **(T-2)**.

3.3.5.6. Ensure area will allow spilled fuel to drain away from the aircraft and FARP equipment. **(T-2)**. Do not allow spilled fuel to drain into a stream, river, or drainage ditch unless the drainage ditch is purpose built to capture spilled fuel. **(T-2)**. Maintain at least 120 feet between drainage ditches/low lying areas and pressurized fuel servicing components to avoid hazard caused by potential accumulation of explosive fuel vapor (see **Table A2.1**). **(T-2)**.

3.3.5.7. Emergency Egress and Reassemble Area. Ensure both tanker and receiver aircraft have a minimum unobstructed egress distance of 1,000 feet to taxi from the FARP site in the event of an emergency. **(T-2)**. Rotary-wing/Tiltrotor aircraft may have a flyaway egress route in lieu of taxi distance. If the distance is less than 1,000 feet or egress area is obstructed, the tanker/receiver aircraft with restricted egress will perform FARP in a cold environment only. **(T-2)**.

3.3.5.8. Identify type surface (concrete, asphalt, clay, grass, dirt, etc.). **(T-2)**.

3.3.5.9. Identify and list obstacles and hazards within the vicinity of the FARP site. **(T-2)**.

3.3.5.10. Rescue and fire coverage. See T.O. 00-25-172 for Aircraft Rescue and Firefighting (ARFF). **(T-2)**.

### **3.4. FARP SITE SURVEY PACKAGE.**

3.4.1. Talon Point Survey Submission. The survey submission shall consists of the following items: **(T-2)**.

3.4.1.1. AF Form 4066, *Forward Area Refueling Point (FARP) Site Survey*.

3.4.1.2. Micro and macro diagrams of FARP sites will depict the airfield/LZ, site layout and nearby mobile or stationary obstacles and hazards that are known at the time of survey. If ARFF is available note its position on the appropriate drawing. A Micro view will focus a reviewer's attention to the layout of the FARP site. A Macro view will add surrounding field references to include runways, taxiways, and parking/unimproved areas. Diagrams will be oriented to true north and must be to scale. Surveyors and/or survey team members are encouraged to include site photos with their Talon Point FARP survey submission. A minimum set of photos will include 4 hemispheres of the site from the tanker aircraft RGR or SPR origin point. Photos require a cardinal hemisphere reference from origin relating to survey true north as depicted in the micro and macro diagrams. Follow **figures A3.1** thru **A8.1** for example site layouts. In the case where example layouts are not possible, adjustments will adhere to **Table A2.1** minimum distance criteria. Photographs of the site and associated critical areas may also accompany the completed submission.

3.4.1.3. AF Form 813, AFI 32-7062, *Comprehensive Planning*, outlines the Environmental Impact Analysis Process. Temporary FARP site surveys refer to **Paragraph 3.3.3**

3.4.1.4. Appropriate Landing Zone Survey (required for unpublished airfields).

**3.5. FARP Survey Review Process.** The following paragraphs outline the FARP survey process from performing the initial groundwork to listing the completed survey on the AFSOC/A3TW database.

3.5.1. The surveyor (AF Form 4066, item 5) and site certification team conduct the FARP survey (i.e., measurements, coordinates, calculating size, obtaining maps and creating diagrams) and annotate the results on an AF Form 4066. The surveyor will be a ST FARP certified surveyor. **(T-2)**. A certified military, GS civilian, contractor, and/or temporary contractor surveyor assigned or hired by DoD to perform survey specific duties. All certified surveyors will be trained IAW the current AFSOC FARP survey training guidance. **(T-2)**. All surveyors must be capable of performing the required survey duties and be familiar with equipment and data computations necessary to complete the survey in order to ensure accuracy. **(T-2)**. To facilitate future use of surveyed FARP sites, initial surveys will be for the largest tanker, as many points as possible, and for the largest receiver aircraft. **(T-2)**. List detailed restrictions as required. **(T-2)**.

3.5.2. The review authority (AF Form 4066, item 11) is a FARP qualified operations group Standards and Evaluations (Stan/Eval) or Tactics Loadmaster/SMA. **(T-3)**. This review ensures the survey form is complete, accurate, and meets the criteria for planned FARP operations.

3.5.3. Survey packages will be generated via Talon Point for approval. **(T-2)**. **Exception:** For short-notice exercises and contingencies, 1<sup>st</sup> Joint Special Operations Aviation Component (1<sup>st</sup> JSOAC) and 66 Air Operations Squadron (AOS) may approve FARP sites surveyed IAW this AFI and T.O. 00-25-172. Only an ST, or ST-certified surveyor will accomplish surveys. **(T-2)**.

**3.6. Sister Service FARP Sites.** Sister service surveyed and certified FARP sites do not require additional certification. Their local procedures will apply as long as they meet area size, emergency egress, and reassemble criteria in this instruction. If the existing sister service survey does not meet **Chapter 3** criteria, do not use the site for FARP operations. **(T-3)**. Forward a copy of the survey and local procedures to AFSOC/A3TW for review and inclusion in the master survey listing. **(T-3)**.

**3.7. FARP at Other than United States-Controlled Sites.** When FARP operations are proposed for sites that are under other than US military control, the surveyor will ensure the survey meets the criteria listed in **Paragraph 3.3** prior to use. **(T-2)**.

3.7.1. The unit requesting use of a FARP site will secure the approval of the appropriate host country military counterparts. **(T-2)**.

3.7.2. The appropriate host country military counterparts will assist in the site certification.

**3.8. Existing FARP surveys.** To use an existing survey for aircraft not included in item 30D of the AF Form 4066; the survey may be updated by requesting a review of the survey by an ST or ST-certified surveyor to ensure the aircraft meets certification criteria and complete a



memorandum for record. Annotate the date of review, surveyor, and reviewer, forward to AFSOC/A3TW for approval.

### **3.9. Completion of AF Form 4066 (T-3).**

- 3.9.1. Block 1. The surveyor will enter appropriate name of FARP site. Certify multiple sites located on one airfield separately.
- 3.9.2. Block 2. Enter location of FARP site. List airfield location.
- 3.9.3. Block 3. Mark whether site is a permanent or temporary site.
- 3.9.4. Block 4. Enter date ST surveyed location.
- 3.9.5. Block 5. Enter full name and grade of ST surveyor.
- 3.9.6. Block 6. Enter Defense Switched Network (DSN) and commercial (COMM) phone number of ST surveyor.
- 3.9.7. Block 7. Enter unit of ST surveyor.
- 3.9.8. Block 8. Enter unit location of ST conducting survey.
- 3.9.9. Signature of ST or ST-certified surveyor.
- 3.9.10. Block 10. Enter date of review. Reviewer must be a FARP qualified operations group level or higher Stan/Eval or Tactics Loadmaster/SMA with extensive knowledge of FARP operations.
- 3.9.11. Block 11. Enter full name and grade of reviewer.
- 3.9.12. Block 12. Enter DSN and COMM phone number of reviewer.
- 3.9.13. Block 13. Enter unit of reviewer.
- 3.9.14. Block 14. Enter unit location of reviewer.
- 3.9.15. Block 15. Signature of reviewer.
- 3.9.16. Block 16. Enter date of approval.
- 3.9.17. Block 17. Enter full name and grade of approval authority (refer to [Paragraph 3.5.3](#) for approval authority).
- 3.9.18. Block 18. Enter DSN and COMM phone number of approval authority.
- 3.9.19. Block 19. Enter unit of approval authority.
- 3.9.20. Block 20. Enter unit location of approval authority.
- 3.9.21. Block 21. Signature of approval authority.
- 3.9.22. Block 22. Enter Point of Contact (POC), location, and frequency of range control facility.
- 3.9.23. Block 23. Enter DSN and COMM phone number of range control facility.
- 3.9.24. Block 24. Enter POC and location for airfield management at FARP site location.
- 3.9.25. Block 25. Enter DSN and COMM phone number of airfield management POC.
- 3.9.26. Block 26. Enter POC and location for ARFF at FARP site location.

- 3.9.27. Block 27. Enter DSN and COMM phone number of ARFF POC.
- 3.9.28. Enter POC and location for environmental matters at FARP site location.
- 3.9.29. Block 29. Enter DSN and COMM phone number for environmental POC.
- 3.9.30. Block 30. Annotate the following in items 30A - 30L.
  - 3.9.30.1. Item 30A. Enter FARP site location on airfield (intercardinal level reference relative to an identified airfield feature/prominent site feature).
  - 3.9.30.2. Item 30B. Enter FARP site surface (concrete, asphalt, clay, grass, dirt, etc.).
  - 3.9.30.3. Item 30C. Enter the largest tanker aircraft certified for FARP site location. Specify in remarks any restrictions.
  - 3.9.30.4. Item 30D. Enter “All aircraft certified IAW T.O. 00-25-172”, or specify restrictions. (Example: all rotary wing except V-22. All fixed wing except C-17).
  - 3.9.30.5. Item 30E. Enter total number of refueling points certified for FARP site.
  - 3.9.30.6. Item 30F. Enter the position of the tanker (MGRS and Lat/Long) and marshaling instructions.
  - 3.9.30.7. Item 30G. Enter the position of the receiver(s) (MGRS and Lat/Long) and marshaling instructions. Address both right and left hand receivers, if required.
  - 3.9.30.8. Item 30H. Enter emergency egress instructions for both tanker and receiver aircraft.
  - 3.9.30.9. Item 30I. State whether environmental impact analysis has been completed and whether it is attached or on file with airfield management/range control.
  - 3.9.30.10. Item 30J. List all obstacles and hazards in the vicinity of the FARP site (include in micro and macro site diagrams).
  - 3.9.30.11. Item 30K. Indicate location of ARFF and notification procedures to be used in the event of a ground emergency.
  - 3.9.30.12. Item 30L. List any additional pertinent information (e.g., fuel spill procedures, location of purpose built fuel spill drainage/containment systems, liability phrase, risk assessment, FARP site survey team members, reassessment notes,).

### **3.10. FARP Operations.**

- 3.10.1. Personnel Required to Conduct FARP Operations:
  - 3.10.1.1. Tanker aircraft crew will provide HRS, Panel Operator (PO), and one HDP for each refueling point. **(T-2)**. Crew Loadmasters typically perform Tanker HRS and PO duties. Refer to AFI 11-2MDS specific guidance or equivalent for additional crew complement requirements. **(T-2)**.
  - 3.10.1.2. Receiver aircraft aircrew should provide the PO. When the receiver aircraft crew complement does not allow for a PO, the tanker aircrew or HDP may provide receiver PO coverage with pre-coordination. Example: attack aircraft or Remotely Piloted Aircraft (RPA). Refer to AFI 11-2MDS specific guidance or equivalent for additional crew complement requirements. **(T-2)**.



### 3.10.2. FARP Training.

3.10.2.1. Provide initial and continuation training in accordance with AFI 23-201 (HDPs only), 11-2MDS series instructions, and applicable MAJCOM training guides. **(T-2)**. These training programs apply to all personnel involved in the operation except ST. **(T-2)**.

3.10.2.2. Initial and continuation training of FARP personnel is conducted jointly by aircrew and fuels instructors in three distinct phases. HDPs will receive training in conjunction with aircrew training. **(T-3)**.

### 3.10.3. FARP Certification Training.

3.10.3.1. Phase I, Classroom Training. An instructor will review applicable technical data, procedures, and guidance with students to familiarize them with the FARP process and any special equipment required. **(T-2)**. Instructors will stress the safety requirements, emergency procedures, and equipment inspections. **(T-2)**. All personnel involved in FARP operations will complete this training as a minimum. **(T-2)**.

3.10.3.2. Phase II, Hands-On Training. This phase applies the information learned in Phase I and progresses to the level of in-depth knowledge and proficiency in all facets of FARP, including proper operation, preventive maintenance, and emergency procedures. This training simulates FARP operations by performing all tasks without aircraft engine(s) running to include pressurizing fuel hoses and operation of special forward area refueling equipment (SFARE). A day and night iteration is required. **(T-2)**. Phase II training is required for loadmasters/SMAs, combat system operator (CSO) (except for EC-130J), and HDPs. **(T-2)**.

3.10.3.3. Phase III, Certification. This phase consists of an actual demonstration of FARP under the supervision of an instructor. Tanker and receiver aircraft engines must be running and fuel transfer to another aircraft accomplished. **(T-2)**. All personnel involved in FARP operations will accomplish a day and night iteration. **(T-2)**. **Note:** Instructors may waive the day iteration based on student proficiency. If receiver aircraft abort after the site has been established, the instructor may certify crewmembers if all other duties are accomplished. **Note:** For C-130 flight engineers on universal aerial refueling receptacle slipway installation (UARRSI) equipped aircraft, if no receiver is available then Phase III training may be completed without an actual receiver provided fuel lines are pressurized.

3.10.3.3.1. Document completion of training and certification in the individual flight evaluation folder or AF Form 4132 and enter it into Aircrew Resource Management System (ARMS), if applicable.

### 3.10.4. FARP Continuation Training.

3.10.4.1. Aircrew member currency and refresher training will be IAW AFI 11-2MDS Vol 1s, and MAJCOM Directives. **(T-2)**.

3.10.4.2. HDP currency will be IAW AFI 23-201 and AFSOC/A4RE directives. **(T-2)**.

3.10.4.3. ST certified surveyors will accomplish FARP refresher training every 24 months. **(T-2)**.

### 3.10.5. Aircraft Fuel Servicing Procedures.

3.10.5.1. Personnel performing these operations will have a thorough knowledge of T.O. 00-25-172, specifically **Chapter 2** (Electrostatic Hazards and Static Grounding and Bonding) and **Chapter 6** (Specialized Aircraft Fueling Operations). **(T-3)**. FARP personnel operating refueling equipment during blacked-out operations must be Night Vision Goggle (NVG) qualified. **(T-3)**.

3.10.5.2. SSEA Reports. Policy and procedural information is incorporated in technical orders, regulations, instructions, manuals, and training programs by the MAJCOM.

3.10.6. FARP Equipment. Properly maintain refueling equipment for FARP operations to ensure its reliability. **(T-2)**. The responsibility for maintaining, inspecting, and storing this equipment is the FARP Program Manager. Inspect, store, and maintain fuels servicing equipment IAW T.O. 37A9-7-2-1, *SFARE Operations and Maintenance Manual*, and other applicable regulations and technical orders. **(T-2)**.

3.10.6.1. FARP equipment will be stored IAW AFI 23-201 and applicable T.O. **(T-2)**. Fuels management team members will prepare/maintain FARP equipment in a ready to deploy posture. **(T-2)**.

3.10.6.2. The unit FARP Team will provide a spill containment kit capable of containing/absorbing 25 gallons of fuel. **(T-2)**. **Note:** Units conducting FARP will be responsible for any cost incurred for cleanup and taxiway/runway repair directly related to fuel spills. **(T-2)**.

3.10.6.3. The FARP Program Manager is responsible for periodic inspection/maintenance of the FARP equipment and the hydrostatic testing of the servicing hoses, IAW T.O. 37A-1-101. **(T-2)**.

3.10.6.4. Use only approved fuel servicing components specified in T.O. 00-25-172 and T.O. 37A9-7-2-1, for FARP operations. **(T-2)**. Tasked units will deploy with all equipment listed in Joint Forward Area Refueling Point (JFARP) and JFA2P Unit Type Codes (UTCs). **(T-2)**. Deviations require AFSOC/A4RE approval. Report damage or equipment malfunctions to AFSOC/A4RE for all FARP UTCs. **(T-2)**.

3.10.7. Extra Equipment and Clothing Requirements. The wear of Gortex® is authorized for aircraft servicing with JP-5/8/10, Jet-A, and diesel fuel (including mixed fuel criteria).

3.10.7.1. All personnel performing Tanker PO, Tanker HRS, and HDP duties will have the following equipment/clothing: **(T-3)**.

3.10.7.1.1. Spare Nomex® flight gloves.

3.10.7.1.2. Extra flight suit/complete change of clothes (including flight boots).

3.10.7.1.3. NVGs with spare battery on your person (as required).

3.10.7.1.4. Eye Protection (NVGs do not constitute eye protection).

3.10.7.1.5. Survival vest/Body armor (as required).

3.10.7.1.6. Overt/infrared chemlight® (as required).

3.10.7.1.7. Full water container to be carried on each person (e.g., canteen, camel back).

- 3.10.7.1.8. Infrared (IR) compatible flashlight (as required).
- 3.10.7.1.9. Sealable water and fuel resistant garment bag to store fuel-soaked clothing.
- 3.10.7.2. Suggested additional items:
  - 3.10.7.2.1. Towel.
  - 3.10.7.2.2. Eye drops.
  - 3.10.7.2.3. Extra-large Ziploc® bags. **Note:** Contact of fuel to human skin causes minor burns, irritation and loss of body oils. Immediately remove all fuel soaked clothing and wash affected areas thoroughly. Put on clean clothing and seal fuel soaked clothes in a plastic bag. Do not wear clothing splashed or soaked with fuel on aircraft due to combustion and fume hazard. **(T-3)**.
  - 3.10.7.2.4. Ballistic Tactical Helmet.
- 3.10.8. Marshaling Requirements. USAF marshallers will be qualified IAW AFI 11-218, *Aircraft Operation and Movement on the Ground*. **(T-2)**. Do not use HDPs to marshal aircraft. **(T-2)**.
  - 3.10.8.1. ST will marshal and control all aircraft movement into and out of the FARP site. **(T-3)**.
  - 3.10.8.2. If ST is not available, all aircraft are responsible for self-marshaling into and out of the FARP site.
  - 3.10.8.3. All rotary-wing and tiltrotor aircraft will land prior to entering the FARP site. **(T-3)**. Identify operational refueling points by placing an IR chemlight® or approved battery operated light on the fire extinguisher at the refueling point. **(T-3)**.
  - 3.10.8.4. If rotary-wing aircraft equipped with skids are to be refueled or terrain features do not allow for landing just prior to the FARP site, they will hover taxi to the designated refueling point. **(T-3)**.
  - 3.10.8.5. Each rotary-wing and tiltrotor receiver should be marshaled/self-marshaled into position so that its refueling receptacle is 25 feet from the IR chemlight® placed on the fire extinguisher. **(T-3)**.
  - 3.10.8.6. Each fixed-wing receiver aircraft should be marshaled into a position so that its refueling receptacle is 50 feet from the IR chemlight® placed on the fire extinguisher. **(T-3)**.
  - 3.10.8.7. Aircraft commanders must ensure marshaling procedures are pre-briefed between the tanker and receiver aircraft prior to FARP operations. **(T-3)**.
  - 3.10.8.8. Tanker Hot Refueling Supervisor will ensure pre-brief efforts address any unique requirements associated with attack aircraft FARP operations. **(T-3)**.
  - 3.10.8.9. Aircrews will ensure these procedures are strictly adhered to at all times, ensuring all safety requirements are met. **(T-3)**.
- 3.10.9. FARP Incident. A FARP Incident is defined as any incident terminating FARP operations, (e.g., fuel contamination, reportable fuel spill, damage to aircraft or equipment,

injury to personnel, etc.). Report through command safety channels any damage to aircraft, reportable fuel spills, and personal injury are mishaps per AFI 91-204. **(T-2)**.

3.10.9.1. FARP Incidents require timely and accurate FARP Incident Investigations. Investigations should identify root cause and recommend corrective actions required to ensure safe and successful FARP mission execution.

3.10.9.1.1. FARP Incidents will be investigated by the 1<sup>st</sup> JSOAC or participating unit's tactics loadmaster or their designated representative, incident mission loadmasters, incident mission hose deployment personnel, and supported force representative, if impacted. **(T-2)**. Mission Commanders will ensure the FARP Incident Report is completed and forwarded to the applicable Operations Group Weapons and Tactics Office within 24 hours of incident. Operations Group Weapons and Tactics Office will forward FARP Incident Reports to AFSOC/A3TW within 5 days of incident. **Figure A9.1** provides a template for the data to be collected in the FARP Incident Report. AFSOC/A3TW can provide electronic version of template. **(T-3)**.

## Chapter 4

### WET WING DEFUELING OPERATIONS

**4.1. Wet Wing Defueling.** Wet Wing Defueling moves fuel from a tanker aircraft with one or more engines running into SSEA approved fuel support equipment, not an aircraft. Using the correct procedures, wet wing operations from the single point refueling (SPR) port of these aircraft can be done with an acceptable degree of risk. Refer to T.O. 00-25-172, **Table 6-4** for aircraft approved for wet wing operations. This operation is not a FARP as defined in **paragraph 1.1.1.1** and does not require AFSC 2FOX1 personnel to accompany the aircrew during flight. Qualified 2F or Sister Service equivalent personnel will be available at the receiver side of the operation.

**4.2. Requirements.** The following actions are mandatory prior to employment of any type aircraft in WWD: **(T-2)**.

4.2.1. SSEA of the operation has been or is performed by AFLCMC/SES in coordination with the MAJCOM safety office. Reference T.O. 00-25-172 and AFI 91-202. AFLCMC/SES is the approval authority for SSEA reports.

4.2.1.1. MAJCOM A3/4 Staff associated with FARP will ensure the technical data for performing these operations, including appropriate aircrew procedural checklists, are written, validated (validation often occurs in association with the SSEA), and published.

4.2.2. The following actions are mandatory prior to the employment of WWD by designated unit personnel:

4.2.2.1. The requirements of **Paragraph 4.2.1** are completed for designated unit aircraft type. **(T-2)**.

4.2.2.2. MAJCOM certification of unit training program. **(T-2)**.

4.2.2.3. MAJCOM certification of initial cadre personnel performing WWD. **(T-2)**.

**4.3. WWD Site Certification.** No site certification required.

**4.4. WWD Layout.** Refueling personnel will comply with distance limitations IAW 00-25-172, **Table 3-2**. **(T-2)**. Ensure at least 50' separation between tanker aircraft SPR and SSEA approved storage system. **(T-2)**. Aircraft must have access to taxi clear of the site in case of an emergency. **(T-2)**.

**4.5. WWD Operations.**

4.5.1. Personnel Required to Conduct WWD Operations.

4.5.1.1. WWD operations will be accomplished with mission design series (MDS) required crew complement and qualified fuels personnel at the receiver site. **(T-3)**.

4.5.2. WWD Training. Provide initial and continuation aircrew training IAW MAJCOM and AFI 11-2 MDS Volume 1 guidance. **(T-2)**.

4.5.3. Aircraft Fuel Servicing Procedures.

4.5.3.1. Personnel performing these operations will have a thorough knowledge of T.O. 00-25-172, specifically **Chapter 2** (Electrostatic Hazards and Static Grounding and Bonding) and **Chapter 6** (Specialized Aircraft Fueling Operations). **(T-3)**. Personnel

operating refueling equipment during blacked-out operations must be NVG qualified. (T-3).

4.5.3.2. SSEA Reports. Policy and procedural information is incorporated in technical orders, regulations, instructions, manuals, and training programs by the MAJCOM.

4.5.4. Extra Equipment and Clothing Requirements. The wear of Gortex® is authorized for aircraft servicing with JP-5/8/10, Jet-A, and diesel fuel (including mixed fuel criteria).

4.5.4.1. MAJCOMS may establish minimum extra equipment and clothing requirements. Suggested items for personnel performing WWD duties:

4.5.4.1.1. Spare Nomex® flight gloves.

4.5.4.1.2. Extra flight suit/complete change of clothes (including flight boots).

4.5.4.1.3. NVGs with spare battery on your person (as required).

4.5.4.1.4. Eye Protection (NVGs do not constitute eye protection).

4.5.4.1.5. Survival vest/Body armor (as required).

4.5.4.1.6. Overt/infrared chemlight® (as required).

4.5.4.1.7. Full water container to be carried on each person (e.g., canteen, camel back).

4.5.4.1.8. IR compatible flashlight (as required).

4.5.4.1.9. Sealable water and fuel resistant garment bag to store fuel-soaked clothing.

4.5.4.1.10. Towel.

4.5.4.1.11. Eye drops.

4.5.4.1.12. Extra-large Ziploc® bags. **Note:** Contact of fuel to human skin causes minor burns, irritation and loss of body oils. Immediately, remove all fuel soaked clothing and wash affected areas thoroughly. Put on clean clothing and seal fuel soaked clothes in a plastic bag. Clothing splashed or soaked with fuel will not be worn on aircraft due to combustion and fume hazard. (T-2).

4.5.4.1.13. Ballistic Tactical Helmet.

## Chapter 5

### HOT REFUELING OPERATIONS

**5.1. Hot Refueling.** Hot refueling is the transfer of fuel from a non-aircraft source (e.g. R-11 or approved fuel support equipment) into an aircraft having one or more engines running.

**5.2. Requirements.** Hot refueling is conducted IAW T.O. 00-25-172.

**5.3. Hot Refueling Site Certification.** Certification is IAW MAJCOM guidance.

**5.4. Hot Refueling Layout.** Refueling personnel will ensure at least 50' separation between tanker aircraft SPR and SSEA approved storage system. **(T-2)**. Aircraft must have access to taxi clear of the site in case of an emergency. **(T-2)**.

#### **5.5. Hot Refueling Operations.**

5.5.1. Personnel Required to Conduct Hot Refueling Operations.

5.5.1.1. Hot refueling operations will be accomplished IAW MAJCOM guidance. **(T-2)**.

5.5.2. Hot Refueling Training. Provide initial and continuation aircrew training IAW MAJCOM and AFI 11-2 MDS Volume 1 guidance. **(T-2)**.

5.5.3. Aircraft Fuel Servicing Procedures.

5.5.3.1. Personnel performing these operations will have a thorough knowledge of T.O. 00-25-172, specifically **Chapter 2** (Electrostatic Hazards and Static Grounding and Bonding) and **Chapter 6** (Specialized Aircraft Fueling Operations). **(T-3)**. Personnel operating refueling equipment during blacked-out operations must be NVG qualified. **(T-3)**.

5.5.3.2. SSEA Reports. Policy and procedural information is incorporated in technical orders, regulations, instructions, manuals, and training programs by the MAJCOM.

5.5.4. Extra Equipment and Clothing Requirements. The wear of Gortex® is authorized for aircraft servicing with JP-5/8/10, Jet-A, and diesel fuel (including mixed fuel criteria).

5.5.4.1. MAJCOMS may establish minimum extra equipment and clothing requirements. Suggested items for personnel performing hot refueling duties:

5.5.4.1.1. Spare Nomex® flight gloves.

5.5.4.1.2. Extra flight suit/complete change of clothes (including flight boots).

5.5.4.1.3. NVGs with spare battery on your person (as required).

5.5.4.1.4. Eye Protection (NVGs do not constitute eye protection).

5.5.4.1.5. Survival vest/Body armor (as required).

5.5.4.1.6. Overt/infrared chemlight® (as required).

5.5.4.1.7. Full water container to be carried on each person (e.g., canteen, camel back).

5.5.4.1.8. IR compatible flashlight (as required).

5.5.4.1.9. Sealable water and fuel resistant garment bag to store fuel-soaked clothing.

5.5.4.1.10. Towel.

5.5.4.1.11. Eye drops.

5.5.4.1.12. Extra-large Ziploc® bags. **Note:** Contact of fuel to human skin causes minor burns, irritation and loss of body oils. Immediately, remove all fuel soaked clothing and wash affected areas thoroughly. Put on clean clothing and seal fuel soaked clothes in a plastic bag. Clothing splashed or soaked with fuel will not be worn on aircraft due to combustion and fume hazard. **(T-2).**

5.5.4.1.13. Ballistic Tactical Helmet.



## Chapter 6

### COLD TO COLD AIRCRAFT FUELING

**6.1. Aircraft.** Aircraft to aircraft ground refueling operations may be accomplished without the aircraft engines operating for combat, simulated combat, and training operations. This procedure permits the rapid refueling of aircraft or helicopters in a tactical, forward operating area. These operations also provide a means of fueling an aircraft in a constrained fuels environment. Aircraft supplied fuel may be pressurized by ground powered pumps or aircraft power units. These procedures may also be utilized to dispense fuel into SSEA approved fuel support equipment.

**6.2. MAJCOM Guidance.** Refer to MAJCOM guidance for requirements, certification, and operations.

## Chapter 7

### AERIAL BULK FUEL DELIVERY SYSTEM OPERATIONS

**7.1. Aerial Bulk Fuel Delivery System (ABFDS).** Aerial Bulk Fuel Delivery System (ABFDS) is designed for aerial delivery of fuel into locations where other methods are impossible or impractical using specified equipment and personnel. The ABFDS can carry anywhere from 3,000-30,000 gallons of multiple fuel types depending on type of approved aircraft employed. Fuel is carried in the cargo bay of the aircraft by collapsible fuel storage tanks that have a maximum storage capacity of 3,000 gallons. ABFDS can support direct aircraft servicing when equipped with ACE which includes filter separators, dispensing hoses, fuel nozzles, and pressure regulators. T.O. 00-25-172 lists tanker and receiver aircraft approved for hot refueling when using ABFDS with ACE equipment. Coordinate ABFDS equipment or fuel quality issues with AFPET and info copy AFSOC/A4RE. **NOTE:** Only qualified AFSC 2F0X1 personnel with SEI 369 may operate ABFDS and these personnel must be AO certified IAW Air Force Enlisted Classification Directory.

**7.2. MAJCOM Guidance.** Refer to MAJCOM guidance for requirements, certification, and operations.

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**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, 19 January 2012

AFI 11-218, *Aircraft Operation and Movement on the Ground*, 28 October 2011

AFI 23-201, *Fuels Management*, 20 June 2014

AFI 32-2001, *Fire Emergency Services Program*, 27 February 2104

AFI 32-7062, *Comprehensive Planning*, 18 Dec 2015

AFI 33-360, *Publications and Forms Management*, 1 December 2015

AFI 91-202, *The US Air Force Mishap Prevention Program*, 24 June 2015

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

AFPD 11-2, *Aircrew Operations*, 19 January 2012

AFECD, *Air Force Enlisted Classification Directory*, 31 October 2017

T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, 13 March 2017

T.O. 37A-1-101, *General Instructions, USAF Fuel, Water and Lubricant Dispensing Equipment*, 30 September 2014

T.O. 37A9-7-2-1, *SFARE Operations and Maintenance Manual*, 1 November 2014

T.O. 42B-1-1, *Quality Control of Fuels*, 15 November 2016

***Prescribed Forms***

AF Form 4066, *Forward Area Refueling Point (FARP) Site Survey*

AF Form 4132, *FARP Hose Deployment Personnel (HDP) Training Report*

AF Form 4134, *Forward Area Refueling Point (FARP) Budget Requirements*

***Adopted Forms***

AF Form 813, *Request for Environmental Impact Analysis*

AF Form 847, *Recommendation for Change of Publication*

***Abbreviations and Acronyms***

**ABFDS**—Aerial Bulk Fuel Delivery System

**ACC**—Air Combat Command

**ACE**—Alternate Capability Equipment

**AFI**—Air Force Instruction

**AFLCMC**—Air Force Life Cycle Management Center

**AFPD**—Air Force Policy Directive

**AFPET**—Air Force Petroleum Office

**AFRC**—Air Force Reserve Command

**AFSC**—Air Force Specialty Code

**AFSOC**—Air Force Special Operations Command

**AMC**—Air Force Mobility Command

**AMC/OGS**—AMC Operations Group, Special Operations

**ANG**—Air National Guard

**ARFF**—Airfield Rescue Firefighting

**ARMS**—Aviation Resource Management System

**ATC**—Air Traffic Control

**Chemlight®**—A non—toxic, non-heat producing chemical light source

**Comm**—Commercial

**CONUS**—Continental United States

**CSO**—Combat Systems Operator

**DoD**—Department of Defense

**Dry Break**—Connection between equipment in which minimal fuel loss occurs when disconnected

**FAM**—Forward Area Manifold. A cart designed to serve as a fuel distribution center and auxiliary pump.

**FARP**—Forward Area Refueling Point

**FSSZ**—Fuel Servicing Safety Zone. Area within 50 feet of a pressurized fuel servicing component and 25 feet around fuel vent outlets of aircraft.

**FMF**—Fuel Management Flight

**HDP**—Hose Deployment Personnel

**HRS**—Hot Refueling Supervisor

**IAW**—In Accordance With

**IG**—Inspector General

**IR**—Infrared

**JFARP**—Joint Forward Area Refueling Point

**JFA2P**—Designation for a specific Joint Forward Area Refueling Point Unit Type Code

**JSOAC**—Joint Special Operations Aviation Component

**MAJCOM**—Major Command

**MFR**—Memorandum for Record

**MOA**—Memorandum of Agreement

**NVG**—Night Vision Goggles

**OCONUS**—Outside Continental United States

**OGS**—Operations Group Special Operations

**OPCON**—Operational Control

**OPR**—Office of Primary Responsibility

**PO**—Panel Operator

**POC**—Point of Contact

**PR**—Personnel Recovery

**RGR**—Rapid Ground Refueling. Alternate fuel connection point associated with Sergeant Fletcher II air refueling pods.

**RPA**—Remotely Piloted Aircraft

**R-11**—Specific model of fuel tanker truck

**SE**—Safety

**SEI**—Special Equipment Identifier

**SFARE**—Special Forward Area Refueling Equipment

**SMA**—Special Mission Aviator

**SOLL**—Special Operations Low Level

**SFO**—Specialized Fueling Operations

**SPR**—Single Point Refueling

**SSEA**—System Safety Engineering Analysis

**ST**—Special Tactics

**TDY**—Temporary Duty

**UARRSI**—Universal Aerial Refueling Receptacle Slipway Installation

**UTC**—Unit Type Code

**WWD**—Wet Wing Defueling

## Attachment 2

## FARP SITE SURVEY DISTANCE CRITERIA (DISTANCE IN FEET)

Table A2.1. FARP Site Survey FSSZ Required Minimum Distance Criteria.

Item	Tanker Aircraft	Receiver Aircraft
Taxiing Aircraft	*50'	*50'
Inhabited Buildings	200'	200'
Aircraft Parking Areas/Uninhabited Buildings	200'	200'
Drainage Ditches/Low Lying Areas/Pressurized Fuel Servicing Components	120'	120'
Rotary Wing Receivers	**125'	**100'
Tilt Rotor Receivers (clear visibility environment)	**150'	**200'
Tilt Rotor Receiver (restricted visibility environment)	**240'	**500'
Fixed Wing Receiver (C-130 and smaller)	**150'	**150'
Fixed Wing Receiver (larger than C-130)	**200'	**300'

**Note:**

1. Distance criteria are measured as the closest distance between any part of an aircraft and building or facility involved. For parking areas, measure from the closest authorized parking positions.
2. Ensure both tanker and receiver aircraft have a minimum unobstructed egress distance of 1,000 feet to taxi from the FARP site in the event of an emergency. Rotary-wing aircraft may have a flyaway egress route in lieu of taxi distance. If the distance is less than 1,000 feet or egress area is obstructed, tanker/receiver aircraft will perform FARP in a cold environment only.
3. Fuel Servicing Safety Zone is the area within 50 feet of a pressurized fuel servicing component and 25 feet around fuel vent outlets of aircraft.
4. Tilt Rotor receiver- two point restricted visibility environment distance criteria fuel flow rates may be unable to achieve the desired rate of fuel transfer. When tactically feasible, a restricted visibility environment single point configuration may provide better results.

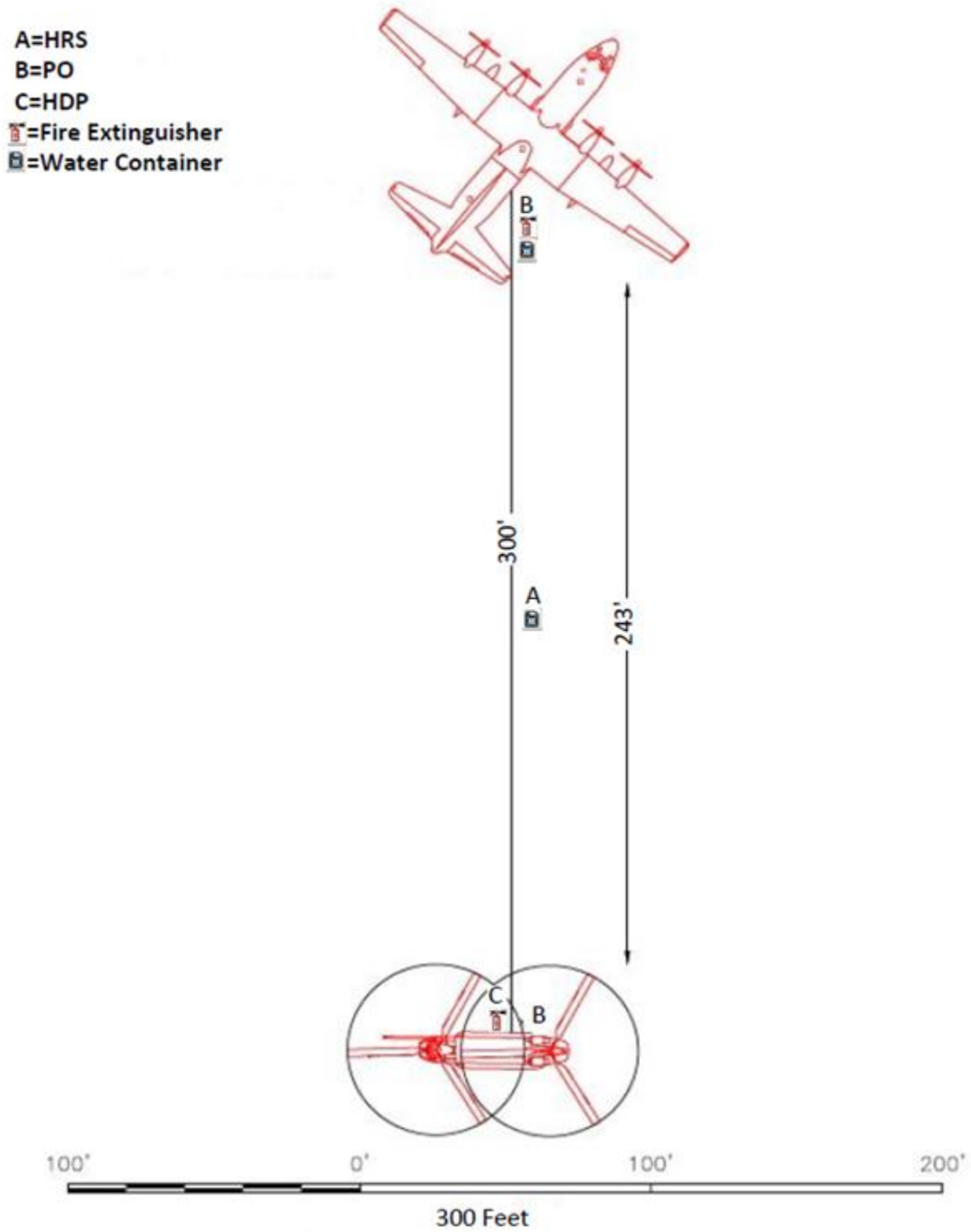
\*Part of an aircraft may pass within 50 feet of a FARP operation as long as the operating engine(s) of the taxiing aircraft do not penetrate the 50-foot criteria.

\*\*Distance between any portion of tanker and or receiver aircraft as applicable.



### Attachment 4 TYPICAL 1-POINT SPR OR RGR

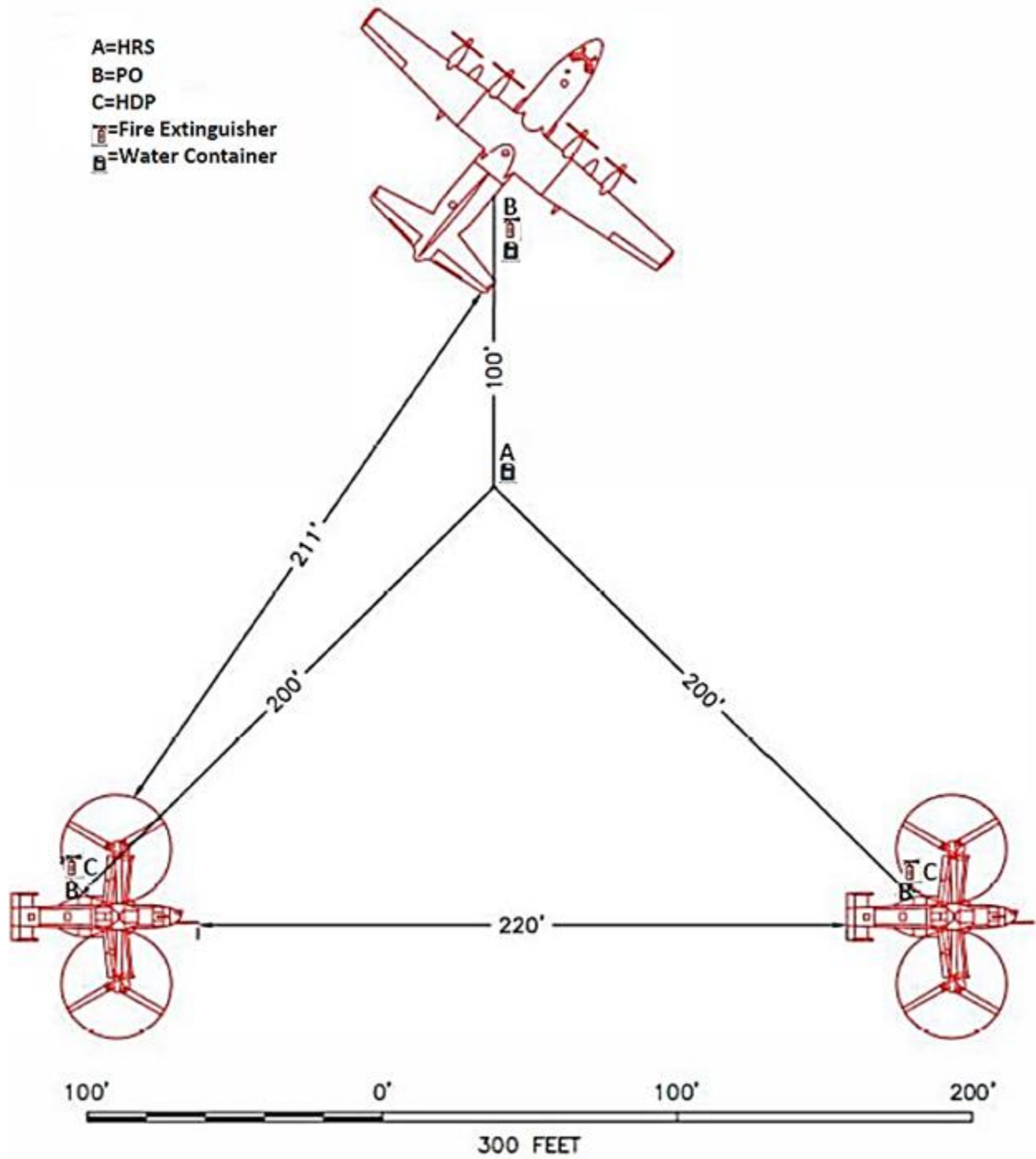
Figure A4.1. Typical 1-Point SPR or RGR





Attachment 5  
TYPICAL 2-POINT SPR OR RGR

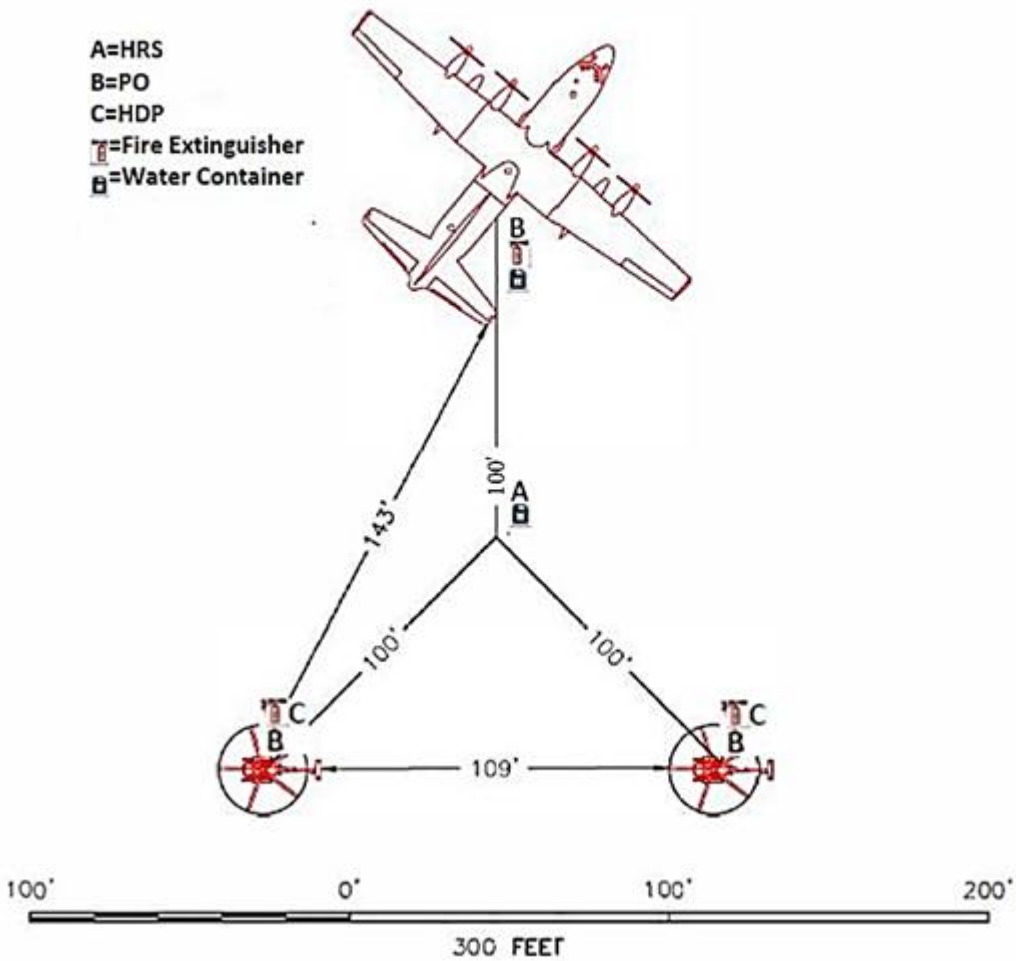
Figure A5.1. Typical 2-Point SPR or RGR.



Attachment 6

MODIFIED 2-POINT AH/MH-6 ONLY SPR OR RGR

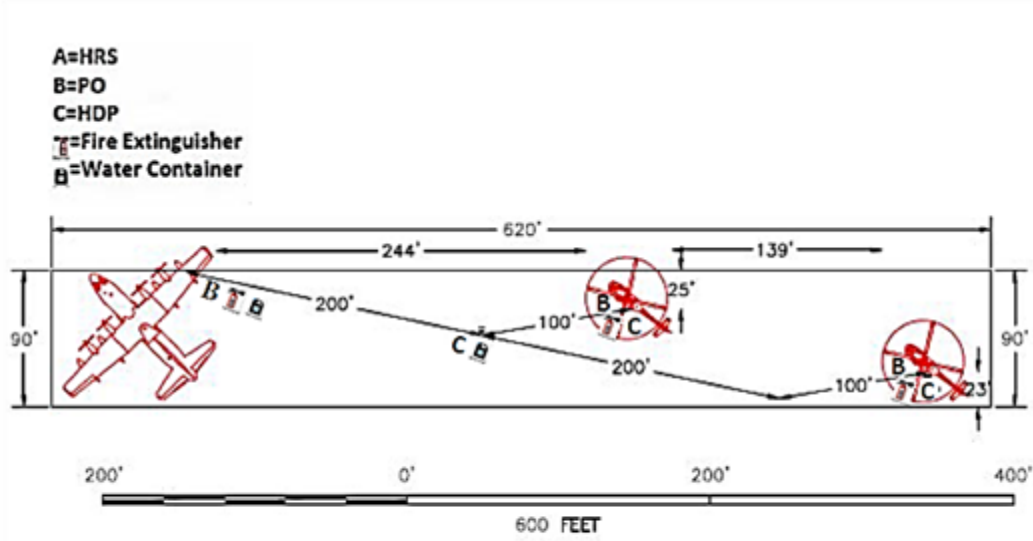
Figure A6.1. Modified 2-Point AH/MH-6 Only SPR or RGR.



Attachment 7

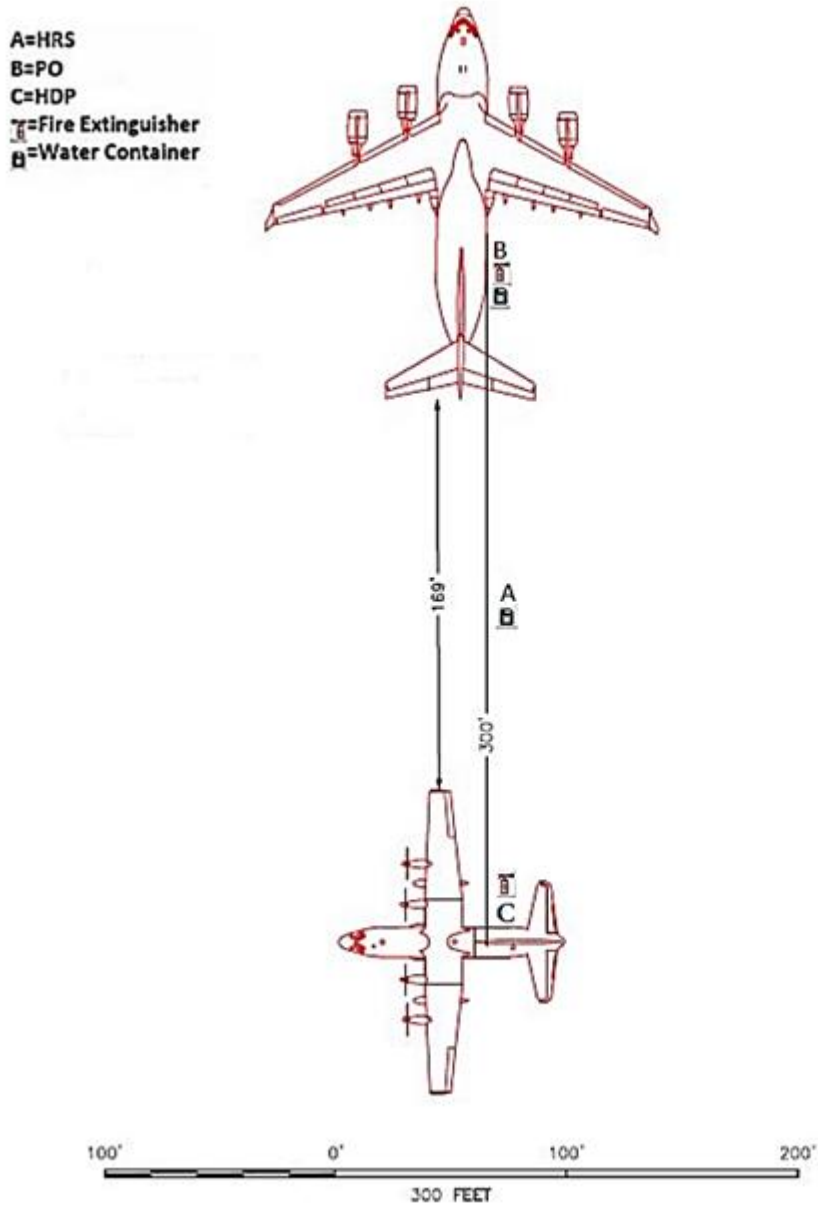
ALTERNATIVE 2-POINT HH/MH-60 AND SMALLER RECEIVER SPR OR RGR

Figure A7.1. Alternative 2-Point HH/MH-60 and smaller receiver SPR or RGR.



Attachment 8  
TYPICAL FIXED WING SPR OR RGR

Figure A8.1. Typical Fixed Wing SPR or RGR.



**Attachment 9**  
**FARP INCIDENT REPORT**

**Figure A9.1. FARP Incident Report.**

FORWARD AREA REFUELING POINT (FARP) INCIDENT REPORT			
DATE:		TIME (ZULU):	
FARP SITE LOCATION:			
DATE OF SURVEY:		OTHER:	
TYPE OF SURFACE:			
TANKER UNIT:		FAM CART USED:	Yes/No
TYPE AIRCRAFT:		FAM CART SERIAL #:	
TAIL NUMBER:		If used, what was the manifold pressure on the FAM CART?	
NUMBER OF POINTS:		OFFLOAD AMOUNT:	
# ENGINES RUNNING:		TEMPERATURE:	
SPR/RGR:		HUMIDITY:	
LAST FUELING SOURCE:		WEATHER CONDITIONS:	
LAST FUELING LOCATION:			
RECEIVER UNIT:			
TYPE AIRCRAFT:			
NUMBER OF RECEIVERS:			
# ENGINES RUNNING:			
<b>CHECKLIST:</b> Answer the questions below, if any of the answers were marked yes, enter detailed information in the Remarks section. Use separate page(s) required for additional data and sequence of events.			
How many and which tanker aircraft pumps used?			
Remarks:			
Was there static discharge?			
Remarks:			
Was there fuel spill? What was the cause? Estimated amount?			
Remarks:			
Was there injury to personnel?			
Remarks:			
Was there damage/malfunction to equipment?			
Remarks (Identify specific equipment):			
Was there damage to tanker aircraft?			
Remarks:			
Was there damage to receiver aircraft?			
Remarks:			
Was there a fire?			
Remarks:			
Was the FARP Site Survey up to date?			
Remarks:			
Was an egress or taxi plan performed?			
Remarks:			
Was the SPR strainer installed?			
Remarks:			
When was the last hydro-static test performed? (affected hose(s))			
Remarks:			
Was a fuel sample collected?			
Remarks:			
Was there suspected fuel contamination?			
Remarks:			
Fuel Sample Results (Results attached, if applicable)			
Remarks:			