

**BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND**



**AIR FORCE MATERIEL COMMAND
INSTRUCTION 21-117**

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Maintenance

***CORROSION CONTROL AND PREVENTION
PROGRAM AND MARKING OF
AEROSPACE EQUIPMENT***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements policy guidance in Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance*. This instruction applies to the Air National Guard and Air Force Reserve. It provides policy and objectives and assigns responsibilities for implementing and maintaining an effective Corrosion Prevention and Control Program for aerospace systems, equipment, and components in AFMC. It specifies responsibilities performed at each level of command and implements guidance presented in Air Force Occupational, Safety, and Health, 48 and 91 series instructions, Technical Orders (T.O.) 1-1-691, *Cleaning and Corrosion Prevention and Control, Aerospace and Non-Aerospace Equipment*, 1-1-8, *Application and Removal of Organic Coatings, Aerospace and non-Aerospace Equipment* and 1-1-689 series, *Avionics Cleaning and Corrosion Prevention/Controls*, lead command instructions, and the specific aircraft –23 T.O.s. If a conflict exists between this instruction and the lead command instruction, contact the Office of Primary Responsibility (OPR). This instruction also provides for applying command approved non-USAF standards and aircraft markings and describes markings of aerospace ground equipment (AGE). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. 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 (RDS). This publication may be supplemented

at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to certification and approval. 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*, 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.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. Major changes include the separation and designation of Combat Wing Organization (CWO) and Air Logistics Center (ALC) responsibilities and aircraft markings in Attachment 2.

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1. General. A relationship exists between preventing and controlling corrosion on aerospace systems, equipment, and components. Corrosion will decrease if corrosion prevention efforts are increased. At the field level, the best and most economical means to corrosion prevention is frequent cleaning in conjunction with periodic maintenance touch-up painting and frequent corrosion inspections. Prevention is the key to an effective corrosion control program; therefore, strict adherence to corrosion prevention polices is essential. USAF technical instructions for corrosion prevention, detection, treatment, and protection furnish general guidance concerning application of the AFMC Corrosion Prevention and Control Program. The applicable USAF or commercial weapon system equipment manuals include inspection frequencies and maintenance requirements of specific weapons systems and equipment. Apply paint schemes/configuration and USAF standard aircraft markings according to T.O. 1-1-8 and applicable weapon system T.O.s. There is no authorization to deviate from the requirements of this instruction without prior approval of HQ AFMC/A4M.

1.1. The Air Logistics Complexes (ALC) and other AFMC maintenance activities will implement this instruction as written. Waivers for deviation to this instruction will be submitted to HQ AFMC/A4M for review and approval/disapproval for any responsibilities/functions deemed not applicable. **(T-2)**

1.2. HQ AFMC/A4M.

- 1.2.1. Oversees the command's Corrosion Control and Prevention Program.
- 1.2.2. Designates a senior non-commissioned officer to manage the Corrosion Control and Prevention Program for AFMC and performs the following responsibilities:
 - 1.2.2.1. Reviews Air Force publications concerning corrosion control and prevention for adequacy and coordinates with appropriate agencies.
 - 1.2.2.2. Represents AFMC at assigned weapon systems Corrosion Prevention Advisory Boards (CPAB), AF/DOD corrosion conferences and field surveys.
 - 1.2.2.3. Develops and coordinates AFMC policy and guidance for corrosion control and prevention.
 - 1.2.2.4. Coordinates within AFMC on the development and testing of corrosion control techniques and materials.
 - 1.2.2.5. Submits comments and recommendations to agencies responsible for the conception, definition, and acquisition of AF materials.

2. Combat Wing Organization (CWO) Responsibilities

- 2.1. Wing Commander (WG/CC).
 - 2.1.1. Approves all aircraft paint waiver requests before submittal to HQ AFMC/A4M. **(T-2)**
 - 2.1.2. Appoints a Wing Corrosion Program Manager. **(T-2)**
- 2.2. Maintenance Group Commander (MXG/CC).
 - 2.2.1. Establishes and maintains an effective corrosion prevention and control program. **(T-2)**
 - 2.2.2. Ensures adequate facilities, equipment, manpower, material and funding are available to support a sound corrosion prevention and control program. For guidance, see the Unified Facilities Criteria (UFC 4-211-02NF) available at http://www.wbdg.org/ccb/DOD/UFC/ARCHIVES/ufc_4_211_02nf.pdf and the Air Force Corrosion Prevention and Control Office's Facilities Guide available at <https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?command=org&pageId=681742&channelPageId=s6925EC133EFE0FB5E044080020E329A9>. The minimum requirements are: **(T-2)**
 - 2.2.2.1. Provides a facility for maintenance painting of assigned aircraft on a year round basis. **(T-2)**
 - 2.2.2.2. Ensures facility control technology meets local, state and federal Environmental Protection Agency requirements in conjunction with current National Emission Standards for Hazardous Air Pollutants (NESHAP) and AFI 21-101, *Aircraft and equipment Maintenance Management*, contamination control requirements. **(T-2)**
 - 2.2.3. Appoints an aircraft wash rack facility manager to ensure proper cleaning materials, equipment, and supplies are maintained in accordance with applicable technical orders. **(T-2)**

2.2.4. Ensures adequate wash rack facilities are available to wash aircraft on a year round basis. This requirement can be satisfied with any one or more of the following: **(T-2)**

2.2.4.1. A specially designed corrosion control facility completely enclosed, heated with environmentally controlled ventilation and waste disposal systems, and equipped with all utilities necessary for accomplishing all facets of aircraft corrosion control. **(T-2)**

2.2.4.2. An environmentally compliant enclosed or covered wash rack. **(T-2)**

2.2.4.3. An outside wash rack may be used on an interim basis when weather conditions permit and when approved by Base Civil Engineer and Base Environmental Manager. **(T-2)**

2.3. Wing Corrosion Program Manager or Aircraft Structural Maintenance (ASM)/Low Observable (LO) Section Chief.

2.3.1. Ensures corrosion inspections are accomplished during each phase/periodic inspection for aircraft and equipment assigned. **(T-2)**

2.3.2. Ensures corrosion prevention and treatment procedures are performed within technical order requirements. **(T-2)**

2.3.3. Ensures only authorized chemical cleaning materials and corrosion removal methods are used. **(T-2)**

2.3.4. Forecasts funding to attend and participate in applicable CPABs and other corrosion/structural related programs/meetings. **(T-2)**

2.3.5. Submits CPAB agenda items to HQ AFMC/A4M. **(T-2)**

2.3.6. Ensures required equipment is obtained for an efficient and effective corrosion prevention and control program. **(T-2)**

2.3.7. Will ensure the units' wash crew supervisor(s) have been trained in all aspects of aircraft wash and develops local checklists. **(T-2)**

2.3.8. Reports corrosion program deficiencies through proper channels, as required. **(T-2)**

2.3.9. Serves as the ASM technical assistant to the Group Commander and HQ AFMC/A4M. **(T-2)**

2.3.10. Ensure facilities meet requirements for safety, fire and personal protection IAW AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*. **(T-1)**

2.3.11. Reviews and assists in developing and updating local corrosion familiarization courses conducted by the unit and/or local field training detachments. **(T-2)**

2.3.12. Determines the adequacy of corrosion control workcards for assigned equipment based on mission and location. **(T-2)**

2.3.13. Periodically visits other work centers to assist in their corrosion prevention efforts. Spot checks chemicals including Corrosion Prevention Compounds (CPC) and cleaners to ensure they are approved. **(T-2)**

2.4. Aircraft Maintenance Squadron (AMXS) Supervisor/Superintendent.

2.4.1. Ensures frequency-of-cleaning/wash/fresh water rinse cycles are established for assigned aircraft to maximize corrosion prevention. Monitors aircraft wash schedules to eliminate overdue washes. In no case will unit wash cycles exceed the maximum wash cycles listed in T.O. 1-1-691. **(T-2)**

2.4.1.1. Reports any aircraft wash overdue to AFMC/A4M. **(T-2)**

2.4.2. Appoints an experienced/qualified wash crew supervisor, 5-level or above (or civilian equivalent). The wash crew supervisor will be trained by an experienced 7-level wash crew supervisor (or civilian equivalent) and training documented in the employees training record. **(T-2)**

2.4.3. Provides a task trained and qualified aircraft wash crew, to include as a minimum, a dedicated crew chief and/or assistant dedicated crew chief and ensures availability of personal protective equipment within the workcenter. **(T-2)**

2.4.4. Ensures Plans, Scheduling & Documentation sections schedule aircraft washes through appropriate Maintenance Information System (MIS). **(T-2)**

2.5. Wash Rack Facility Manager.

2.5.1. Ensures facilities meet requirements for safety, fire and personal protection IAW AFI 91-203. **(T-1)**

2.5.2. Ensures approved cleaners are available IAW T.O. 1-1-691 and are properly used, to include proper mix ratio and the correct cleaner for each area cleaned. **(T-2)**

2.5.3. Ensures wash rack facility and surrounding area is kept clean and properly maintained. **(T-2)**

2.5.4. Maintains all wash rack equipment in serviceable condition, i.e., water hoses, pumps, air hoses, powered wash equipment, support equipment, personal protective equipment, etc. **(T-2)**

2.6. Wash Crew Supervisor.

2.6.1. Provides safety briefings explaining hazards associated with wash rack operations. **(T-2)**

2.6.2. Ensures aircraft wash crews are task trained and qualified. **(T-2)**

2.6.3. Ensures proper safety equipment, personal protective equipment and cleaning materials are inspected, serviceable, and properly used IAW AFI 91-203. Examples of equipment used include fall protection, water and air hoses, pumps, and powered wash equipment. **(T-2)**

2.6.4. Enters the requirement for wash, performs cleanliness inspection, signs the wash completion and enters the lubrication requirement in the aircraft's AFTO Form 781A, *Maintenance Discrepancy and Work Document*. **(T-2)**

2.6.5. Ensures aircraft are properly grounded IAW T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*. **(T-2)**

2.6.6. Ensures wash rack facility and surrounding area is clean before and after use. **(T-2)**

2.7. Quality Assurance.

2.7.1. Frequently spot-checks aircraft for cleanliness and lubrication after wash. **(T-2)**

2.7.2. Monitors and enforces the use of approved coating materials and cleaning compounds identified in the Qualified Products List (QPL). **(T-2)**

2.8. AGE Flight Chief.

2.8.1. Ensures an effective corrosion control program is established and enforced for assigned equipment. **(T-2)**

2.8.2. Develops a tracking system to prioritize complete paint for AGE equipment based on a “worst is first” principle. **(T-2)**

2.8.3. Ensures MIS is used to schedule and document AGE painting. **(T-2)**

2.8.4. Ensures maintenance, servicing, and inspection activity personnel are oriented to corrosion prevention and control. **(T-2)**

2.8.5. Ensures powered and non-powered AGE is cleaned and thoroughly inspected during each periodic inspection. If touch-up painting is required, accomplish IAW T.O. 35-1-3, *Corrosion Prevention, Painting and Marking of USAF Support Equipment (SE)*. **(T-2)**

2.8.6. Enforces the use of approved cleaning compounds identified in the QPL. **(T-2)**

2.8.7. Schedules work beyond AGE workcenter capability into the appropriate fabrication workcenter. **(T-2)**

2.9. Maintenance Training Flight

2.9.1. Provides all maintenance personnel (excluding ASM personnel) that come in contact with aircraft and aerospace ground equipment, with corrosion prevention/control initial training and recurring training. Ensures new personnel assigned receive initial corrosion prevention/control training during the maintenance orientation. **(T-2)**

2.9.2. Develops and implements a corrosion prevention and control training program. **(T-2)**

2.9.3. Tailors the course to meet local needs. **(T-2)**

2.9.4. Codes and documents training in the appropriate MIS. **(T-2)**

2.9.5. Training curriculum shall include but not be limited to: **(T-2)**

2.9.5.1. Corrosion identification procedures and techniques. **(T-2)**

2.9.5.2. Familiarization with aircraft/equipment corrosion prone areas. **(T-2)**

2.9.5.3. Reporting and documentation procedures for identified corrosion. **(T-2)**

2.9.5.4. Removal and treatment of minor corrosion. **(T-2)**

2.9.5.5. Proper use of cleaning compounds. **(T-2)**

2.9.5.6. Enforcement and awareness of approved cleaning compounds identified in the QPL. **(T-2)**

3. ALC Responsibilities

3.1. ALC Commander.

3.1.1. Oversees the ALC Corrosion Control and Prevention Program. **(T-2)**

3.1.2. Designates a ALC Corrosion Control and Prevention Program Manager and performs the following responsibilities: **(T-2)**

3.1.2.1. Reviews AF publications concerning corrosion control and prevention for adequacy and coordinates with appropriate agencies. **(T-2)**

3.1.2.2. Represents ALC at assigned weapon systems CPAB, AF/DOD corrosion conferences and field surveys. **(T-2)**

3.1.2.3. Develops and coordinates ALC policy and guidance for corrosion control and prevention. **(T-2)**

3.1.2.4. Coordinates within AFMC on the development and testing of corrosion control techniques and materials. **(T-2)**

3.1.2.5. Coordinates with Air Force Research Laboratory (AFRL) and AFMC on technology insertion of coatings and all materials and/or processes used in corrosion control of weapons systems maintained and supported by the ALC. **(T-2)**

3.1.2.6. Reviews all technology insertion programs, to include all Pollution Prevention, Strategic Environmental Research and Development Program (SERDP), Environmental Security Technology Certification Program (ESTCP), Small Business Innovation Research (SBIR), and other new technologies related to or effecting corrosion prevention and/or its control, mitigation or effects on all weapon systems maintained by the ALC prior to implementation. **(T-2)**

3.1.2.7. Works in conjunction with ALC pollution prevention personnel on all pollution prevention projects that are related to corrosion prevention or substitution of products used in corrosion prevention. **(T-2)**

3.1.2.8. The ALC Corrosion Control and Prevention Program Manager shall be included on all committees establishing rules and/or implementation of programs relating to corrosion prevention and control for the ALC. **(T-2)**

3.1.2.9. Reviews and coordinates with process engineering groups at the ALC in determining process improvements for materials used in corrosion prevention. **(T-2)**

3.1.2.10. Reviews and coordinates training employees on the use and implementation of materials used in training and reduction of corrosion. **(T-2)**

3.1.2.11. Reviews and coordinates with System Program Offices (SPO) and their corrosion engineers on developing processes and procedures for corrosion control. **(T-2)**

3.1.2.12. Reviews and coordinates on significant changes to corrosion prevention and control facilities, equipment, materials, and processes used at the ALC. **(T-2)**

3.1.2.13. Submits comments and recommendations to agencies responsible for the conception, definition, and acquisition of AF materials. **(T-2)**

3.1.2.14. Forecasts funding to attend and participate in applicable CPABs and other corrosion/structural related programs/meetings. **(T-2)**

3.1.2.15. Submits CPAB agenda items to HQ AFMC/A4M. **(T-2)**

3.1.2.16. Reviews and assists in developing and updating local corrosion familiarization courses conducted by the unit and/or local field training detachments. **(T-2)**

3.1.2.17. Determines the adequacy of corrosion control workcards for assigned equipment based on mission and location. **(T-2)**

3.1.2.18. Periodically visits other work centers to assist in their corrosion prevention efforts. Spot checks chemicals including CPCs and cleaners to ensure they are approved. **(T-2)**

3.2. MXG/CC

3.2.1. Establishes and maintains an effective corrosion prevention and control program. **(T-2)**

3.2.2. Ensures adequate facilities, equipment, manpower, material and funding are available to support a sound corrosion prevention and control program. The minimum requirements are: **(T-2)**

3.2.2.1. Ensures facility control technology meets local, state and federal Environmental Protection Agency requirements in conjunction with current National Emission Standards for Hazardous Air Pollutants (NESHAP) and AFI 21-101 contamination control requirements. **(T-2)**

3.3. ASM/LO workcenter supervisor. **(T-2)**

3.3.1. Ensures corrosion inspections are accomplished during each phase/periodic inspection for aircraft and equipment assigned. **(T-2)**

3.3.2. Ensures corrosion prevention and treatment procedures are performed within technical order requirements. **(T-2)**

3.3.3. Ensures only authorized chemical cleaning materials and corrosion removal methods are used. **(T-2)**

3.3.4. Provides job safety, fire prevention and protection, and health training to all personnel as required by AFI 91-203. Also, ensures that required training is documented. **(T-1)**

3.3.5. Ensures Bioenvironmental services conduct initial baseline comprehensive evaluations and provide annual follow-ups to determine adequacy of workcenter controls for occupational hazards. Maintains records of this survey in the work center. **(T-2)**

3.3.6. Ensures required equipment is obtained for an efficient and effective corrosion prevention and control program. **(T-2)**

3.3.7. Reports corrosion program deficiencies through proper channels, as required. **(T-2)**

3.3.8. Serves as the ASM technical assistant to the Group Commander and HQ AFMC/A4M. **(T-2)**

3.3.9. Ensure facilities meet requirements for safety, fire and personal protection IAW AFI 91-203. **(T-1)**

3.4. Wash Rack Facility Manager.

3.4.1. Ensures facilities meet requirements for safety, fire and personal protection IAW AFI 91-203. **(T-1)**

3.4.2. Ensures approved cleaners are available IAW T.O. 1-1-691 and are properly used, to include proper mix ratio and the correct cleaner for each area cleaned. **(T-2)**

3.4.3. Ensures wash rack facility and surrounding area is kept clean and properly maintained. **(T-2)**

3.4.4. Maintains all wash rack equipment in serviceable condition, i.e., water hoses, pumps, air hoses, powered wash equipment, support equipment, personal protective equipment, etc. **(T-2)**

3.5. Wash Crew Supervisor.

3.5.1. Provides safety briefings explaining hazards associated with wash rack operations. **(T-2)**

3.5.2. Ensures aircraft wash crews are task trained and qualified. **(T-2)**

3.5.3. Ensures proper safety equipment, personal protective equipment and cleaning materials are inspected, serviceable, and properly used IAW AFI 91-203. Examples of equipment used include fall protection, water and air hoses, pumps, and powered wash equipment. **(T-1)**

3.5.4. Enters the requirement for wash, performs cleanliness inspection, signs the wash completion and enters the lubrication requirement in the aircraft's AFTO Form 781A. **(T-2)**

3.5.5. Ensures aircraft are properly grounded IAW T.O. 00-25-172. **(T-2)**

3.5.6. Ensures wash rack facility and surrounding area is clean before and after use. **(T-2)**

3.6. Quality Assurance.

3.6.1. Frequently spot-checks aircraft for cleanliness and lubrication after wash. **(T-2)**

3.6.2. Monitors and enforces the use of approved coating materials and cleaning compounds identified in the QPL. **(T-2)**

3.7. Maintenance Training Flight

3.7.1. Provides all maintenance personnel (excluding ASM personnel) that come in contact with aircraft and aerospace ground equipment, with corrosion prevention/control initial training and recurring training. Ensures new personnel assigned receive initial corrosion prevention/control training during the maintenance orientation. **(T-2)**

- 3.7.2. Develops and implements a corrosion prevention and control training program. (T-2)
- 3.7.3. Tailors the course to meet local needs. (T-2)
- 3.7.4. Codes and documents training in the appropriate MIS or approved depot product. (T-2)
- 3.7.5. Training curriculum shall include but not be limited to: (T-2)
 - 3.7.5.1. Corrosion identification procedures and techniques. (T-2)
 - 3.7.5.2. Familiarization with aircraft/equipment corrosion prone areas. (T-2)
 - 3.7.5.3. Reporting and documentation procedures for identified corrosion. (T-2)
 - 3.7.5.4. Removal and treatment of minor corrosion. (T-2)
 - 3.7.5.5. Proper use of cleaning compounds. (T-2)
 - 3.7.5.6. Enforcement and awareness of approved cleaning compounds identified in the QPL. (T-2)

4. Unit Corrosion Control Program Requirements.

- 4.1. Owing activities shall wash and clean their aircraft and support equipment. (T-2)
- 4.2. ASM personnel will assist the owning activities in their corrosion prevention efforts by accomplishing scheduled corrosion inspections on aircraft, support and test equipment if required. (T-2)
- 4.3. Owing activities personnel shall perform aircraft corrosion inspection work cards specified in the -6 T.O. ASM personnel will assist when needed. All maintenance personnel, regardless of Air Force Specialty Code (AFSC), shall examine each part removed and inspect the inside of all exposed areas for corrosion. Avionics maintenance personnel shall inspect the electrical connectors of avionics line replaceable units (LRUs), inside equipment drawers, and so forth, for corrosion. All deficiencies noted during these inspections will be entered in the aircraft's AFTO Form 781A. When corrosion discrepancies are discovered that may affect aircraft structural integrity or safety of flight/operation or are beyond the using organization's capability to evaluate and repair, an ASM specialist will be requested. (T-2)
- 4.4. Maintenance personnel who remove/install aircraft panels and doors must ensure seals are serviceable and sealant is applied to panels and fasteners as specified in applicable aircraft technical orders. (T-2)
- 4.5. Maintenance personnel shall report all corrosion deficiencies through the MIS IAW 00-20 series technical orders or depot equivalent. Accurate documentation of maintenance actions in support of the Corrosion Control and Prevention Program is essential to support future manning, equipment requirements, training and parts/material procurement requirements. (T-2)

5. Aerospace Vehicles Marking Requirements. This section provides guidance for applying command approved non-USAF standard aircraft markings as authorized in T.O. 1-1-8. Paint schemes/configurations and USAF standard aircraft markings will be applied in accordance with

T.O. 1-1-8 and the applicable aircraft technical order. Aircraft markings will be applied to aircraft as specifically authorized by HQ AFMC/A4M, this instruction, T.O. 1-1-8, or the applicable aircraft technical order. Low observable aircraft markings not currently approved require a waiver due to strict survivability analysis requirements; route the waiver request through AFMC/A4M. Aircraft inputs to depot will be marked IAW Air Force directives and this instruction only, unless otherwise approved by HQ AFMC/A4M. HQ AFMC/A4M is the point of contact for aircraft painting and markings, to include all unit designation markings. **(T-2)**

5.1. Aircraft markings. All aircraft markings and basic paint schemes will be maintained intact, legible and distinct in color. Command standardization of markings by mission design series (MDS) is of primary concern. Fighter/Trainer units should plan to scuff sand and overcoat their aircraft exterior finish every four to six years to maintain the coating system integrity and aircraft appearance. However, the coating system may experience premature failure or exceed the four to six year life expectancy. The four to six year overcoat is the approximate mid-life expectancy of present coating systems qualified for aircraft application. Scuff sand and overcoat of the aircraft exterior should be performed at intervals such that the total mil thickness of the finish system does not exceed 18 mils prior to an authorized strip and recoat. Aircraft exterior finished shall not exceed more than two full scuff and overcoats before strip and recoat. All aircraft coatings will be evaluated/rated every 6 months for appearance/coating system integrity using applicable technical data or a locally developed system. The aircraft must be washed and clean prior to paint scoring. Supervisors will use ratings to determine corrosion treatment/paint scheduling priority. Units are required to adopt maintenance painting techniques (i.e., spot painting and sectionalized painting as stated in T.O. 1-1-8) to maintain aircraft corrosion protection and appearance between overcoats. Partial painting “sections” of the aircraft will help reduce the effects of mottling and mismatch. Units should rotate Commander’s aircraft to prevent excessive paint build-up from too frequent overcoating. Fully overcoated aircraft will be documented in MIS and the individual aircraft AFTO Form 95, *Significant Historical Data*, for tracking purposes. Units with large aircraft should rely on spot maintenance painting and sectionalized painting between depot cycles to maintain the coating system integrity. **(T-2)**

5.1.1. Do not apply aircraft markings to aircraft unless specifically authorized by this directive, T.O. 1-1-8, aircraft drawings, or the applicable aircraft T.O. HQ AFMC/A4M is the point of contact for aircraft painting and markings. **(T-2)**

5.1.2. Aircraft assigned to AFMC but possessed by other units, such as Air Warfare Center aircraft, will not have AFMC markings. **(T-2)**

5.1.3. All newly assigned aircraft in AFMC will be in compliance with this instruction within 90 days after arrival. **(T-2)**

5.1.4. Conspicuity Markings. Test and test support aircraft may use these markings. AFMC field commanders have the authority to select aircraft for this type of marking scheme. Selection must be based on mission essentiality and conform to T.O. 1-1-8. Waivers will be submitted to HQ AFMC/A4M IAW T.O. 1-1-8. **(T-2)**

5.2. Silk-Screen Printing. The silk-screen printing process is an approved method for applying insignia to aircraft. **(T-2)**

5.2.1. The silk-screen print method will not be used on aircraft surfaces that are contoured or have protruding screws, rivets, or bolts making use of rigid silk-screen frames impossible. **(T-2)**

5.2.2. When used, silk-screen printing kits will be procured using local purchase procedures with operations and maintenance (O&M) funds. Vendors can be identified by local contracting offices. **(T-2)**

5.3. Stenciling. Markings may be applied using stencils. Refer to T.O. 1-1-8 to determine the compatibility of stenciling paints and paint finishes. **(T-2)**

5.4. Command Insignia. The application of the command insignia on aircraft is mandatory. The insignia will be applied to both sides of the vertical stabilizer unless otherwise specified. Size, color and location of command insignias by MDS are specified in [Attachment 2](#). NOTE: Aircraft with LO coatings to include F-16 aircraft with Uniform Have Glass (UHG), will use subdued insignias in contrasting shade of gray. **(T-2)**

5.5. Organizational Insignia. The application of wing insignia is mandatory. The insignia will be applied to both sides of the forward fuselage. The operational squadron insignia may be applied on the left side in place of the wing insignia. Size, color and location of organizational insignias by MDS are specified in [Attachment 2](#). NOTE: Aircraft with LO coatings to include F-16 aircraft with UHG, will use subdued insignias in contrasting shade of gray. **(T-2)**

5.6. Distinctive Unit Aircraft Identification Marking. The application of the unit designator is mandatory for all AFMC aircraft unless otherwise directed. HQ AFMC/A4M is the OPR for the assignment of unit designators. T.O. 1-1-8 or the applicable aircraft T.O. will provide color restrictions for the unit designator. The unit designator will be applied in accordance with guidelines in [Attachment 2](#) of this instruction. **(T-2)**

5.7. Tail Stripe. Each flying unit will have a tail stripe unique to the unit. The use of the same tail stripe by two or more units within a wing is not permitted. The Wing Commander may include colors from all flying units. The tail stripe will be applied at the upper portion of the vertical stabilizer, and must be in the form of a straight stripe. The width will not exceed 6 inches on fighter type aircraft and 28 inches on large aircraft. The stripe may be any color or pattern, and may contain a logo. On aircraft bearing the American Flag the tail stripe must be solid in color and will not contain any logo, name, or lettering. On aircraft with multiple vertical stabilizers, the tail stripe may be of either a wrap-around style on both vertical stabilizers or applied to the outboard sides of each vertical stabilizer. **(T-2)**

5.8. Aircrew And Crew Chief Names. Aircrew and crew chief/assistant names may be applied to all command aircraft, but must be removed prior to deployment where they may be subject to enter a combat zone. Application of nicknames, punctuation, and/or call signs is not permitted. The style and size of letters for each MDS aircraft are identified in [Attachment 2](#). Any style and size letter not identified for a particular MDS aircraft in [Attachment 2](#) will be considered a unit option, but will not exceed 3 inches in height. Each MDS aircraft in the wing will be standardized with the exception of the designated Commander's aircraft. The Commander's aircraft may have different lettering, but will not exceed 3 inches in height. A background block for pilot/crew chief names may be used. The block should be in contrasting color to the section of the aircraft where applied. To further

an MDS theme, the block may be preceded by a design depicting the MDS; i.e., F-15 eagle head, F-16 falcon head, etc. The name block should give a subdued appearance and may be other than rectangular in shape. Names will contain military rank/civilian (Mr. or Ms.), first name, initial, and last name. **(T-2)**

5.9. Commander's Aircraft Markings. Commander's aircraft referred to in this instruction are those designated as Test Center, Test Wing, Operations Group (OG) and Operations Squadron Commander's aircraft. The Test Center Commander may select one Wing within the command to have an aircraft specifically marked. It will be the only aircraft authorized so marked. Wing, OG, and Operations Squadron Commanders are authorized only one aircraft each to be marked with standardized commander type markings. The following are markings authorized for use on Commander's aircraft: **(T-2)**

5.9.1. Wing and/or Test Center insignias on the right forward fuselage and a collage of assigned flight/operations squadron insignias on the left forward fuselage. **(T-2)**

5.9.2. Highlighting of unit designator and tail number. All highlighting will be done in a contrasting gray, black, or white as long as it meets primary basecoat gloss requirements e.g. gloss, camouflage or gunship. With exception of the B-2 aircraft, all unit designators and radio call numbers will remain on vertical stabilizers as depicted in applicable technical orders. Variations may be approved for Commanders aircraft when required with approval from HQ AFMC/A4M. **(T-2)**

5.9.3. Unit unique markings. This policy is provided to allow latitude for application of anniversary logo markings to Wing Commander aircraft. When applied, anniversary markings will not interfere with required aircraft markings and must be removed immediately after the anniversary period (1-year maximum). Waivers are not required for unit unique markings, however, Wing Commanders must approve the markings, and photographs must be provided to HQ AFMC/A4M for review and file. State flags and logos, other than anniversary type, are not considered unit unique markings. AFMC/CC has designated HQ AFMC/PA as the clearinghouse for all requests to name AFMC aircraft. This includes markings previously considered unit unique and are community related/appreciation types such as "Spirit of," "City of," "State of." Naming aircraft is a tradition designed to commemorate or honor individuals, geographic locations, or events either for the support provided the Air Force on a long-term basis, or because of its significance to Air Force history or heritage. Recommendations must include a proposed name, suggested aircraft and tail number, and detailed justification for the proposed name. Contact the wing Public Affairs office for details. **(T-2)**

5.10. Aircraft Travel Pods. Travel pods for aircraft painted in camouflage paint schemes may be painted with the same color and type of paint as the aircraft and have no additional markings. Units with multicolor aircraft should select one primary color of the aircraft for the travel pod. Travel pods designated for Commander's aircraft may be any color, but must complement the overall paint scheme of the aircraft and present a professional appearance. These travel pods may contain the name, position, and appropriate rank insignia of the individual. Lettering may be of any color and style, but shall not exceed 6 inches in height. **(T-2)**

5.11. External Fuel Tanks. External fuel tanks shall be painted the same color and tone as existing aircraft coating. Squadron designator and tank serial number shall be applied with

contrasting colors to ensure accurate tracking of fuel tanks (see [Attachment 2](#) for marking instructions). **(T-2)**

5.12. Paint Identification Placard. The paint identification block is a mandatory marking specified in T.O. 1-1-8. The block may be of a unique design, i.e., eagle head, falcon head, or state outline but must not exceed 6 inches by 6 inches in size and will match the color of other markings on the aircraft. Waiver requests are not required for this item, however, Wing Commander approval is required and photographs of the design must be provided to HQ AFMC/A4M for review and file. **(T-2)**

5.13. Nose Numbers. Aircraft nose numbers shall be in block or Helvetica letters, not to exceed four digits. Specific location and size for each different type aircraft is contained in Attachment 2. The paint material(s) used to apply nose numbers shall have the same gloss requirement as the base aircraft coating. **(T-2)**

5.14. Bird Of Prey Silhouette. Bird of prey silhouettes are authorized on F-15 and F-16 aircraft as a unit option but must be standardized within a wing by MDS. No waiver is required to apply bird of prey silhouettes but a photograph must be submitted to HQ AFMC/A4M for review and file. The following guidelines apply: **(T-2)**

5.14.1. F-15 Aircraft. The silhouette will be placed on the insides of the vertical stabilizers. They will not exceed 24 inches in height and must be applied in a contrasting gray color. **(T-2)**

5.14.2. F-16 Aircraft. The silhouette can be placed anywhere on the aircraft as long as it does not interfere with standard required markings. The silhouette will not exceed 18 inches in height and must be applied in a contrasting gray color. **(T-2)**

5.15. Gun Ports. Gun ports will be painted in flat black paint. **(T-2)**

5.16. Nose Art. For purposes of clarification, “nose art” shall be the term used to identify specialized artwork applied to any area of the aircraft. Nose art is authorized under the following guidelines: **(T-2)**

5.16.1. Be representative of the unit or civilian community. **(T-2)**

5.16.2. Be distinctive, symbolic and designed in good taste. **(T-2)**

5.16.3. Enhance unit pride. **(T-2)**

5.16.4. Be gender neutral. **(T-2)**

5.16.5. Match gloss requirements of the basic paint scheme, i.e., aircraft with flat camouflage schemes require application of nose art in flat colors. **(T-2)**

5.16.6. All designs will be reviewed by the base Judge Advocate (JA) and Social Actions office for legal, discriminatory, and copyright issues. In addition, designs will not be used to endorse any unofficial organization or activity. Final approval for nose art applied to aircraft rests with the Wing Commander. Photographs of all approved designs will be submitted to HQ AFMC/A4M for review and file. World War II nose art that meets the above criteria may be used. Cartoon-type characters may be used; however, the unit will be responsible for all copyright issues. Removal of nose art prior to deployment will be at the discretion of the WG/CC. **(T-2)**

5.16.7. Apply approved nose art within these specific areas:

5.16.7.1. C-135/C-18 Aircraft. On the left side, just aft of the nose radome between Body Station's (BS), 182.0 and 22.0, and Water Line's (WL) 162.0 and 210.0. The art must be no larger than 4 x 4 feet. **(T-2)**

5.16.7.2. B-52/B-1B Aircraft. On the left side, just below the pilots windshield, and no larger than 4 x 4 feet. **(T-2)**

5.16.7.3. Fighter/Training Aircraft. On the left side of the fuselage or the nose gear door and no larger than 2 x 2 feet. All aircraft will have a standardized location. **(T-2)**

5.17. Competition Aircraft. Units participating in competitions such as William Tell, Gunsmoke, etc, will follow the guidelines established in competition rules for aircraft appearance. Competitions will be considered "come as you are" and no waivers will be granted. "Come as you are" is defined as no special effort, painting, or additional markings applied to enhance or improve the overall appearance of the aircraft. This includes polishing of titanium, using Commander type markings, etc. **(T-2)**

5.18. Helicopter Rotor Markings. All helicopter rotor markings will be in accordance with T.O. 1-1-8 and applicable weapons system technical data. **(T-2)**

5.19. Aircraft Transfer. The following markings must be removed prior to formal transfer of aircraft to other units or MAJCOMs (aircraft retiring to Aerospace Maintenance and Regeneration Group (AMARG) need not have any markings removed). **(T-2)**

5.19.1. Organizational insignias. **(T-2)**

5.19.2. Unit designator. **(T-2)**

5.19.3. Tail stripe. **(T-2)**

5.19.4. Aircrew and crew chief names. **(T-2)**

5.19.5. Unit unique markings. **(T-2)**

5.19.6. Nose art may be retained if gaining unit agrees. **(T-2)**

5.20. Waivers. WG/CCs will submit waiver requests to HQ AFMC/A4M for review and to HQ AFMC/A4 for approval/disapproval. Waivers that are in violation of aircraft technical data will not be accepted. Waiver requests must include the following: **(T-2)**

5.20.1. Clear statement of present procedure/markings. **(T-2)**

5.20.2. Clear statement of proposed change. **(T-2)**

5.20.3. Justification to include historical significance, if applicable. **(T-2)**

5.20.4. Photographs: Two 8" x 10" or digital color photographs, one of present marking and one of requested change. **(T-2)**

5.21. Photo Requirements. Each AFMC unit will submit one full-length (landscape orientation) 8" x 10" color photo of the Wing Commander's aircraft each time a marking change occurs. Changes will be forwarded to HQ AFMC/A4M for review and file. **(T-2)**

5.21.1. Units shall provide 8" x 10" color photographs of unique markings for all local option changes authorized by this instruction (i.e., tail stripe/name block design and/or color changes, paint data placard, bird of prey silhouettes, nose art, etc.) to HQ AFMC/A4M for review and file. **(T-2)**

5.22. Test Equipment/Consolidated Tool Kits (CTK). Tone down of test equipment, CTKs and like equipment will be determined by the aircraft gloss requirement, i.e., unit with aircraft having gloss finishes may apply gloss finishes to their test equipment and CTKs. If the aircraft assigned have a requirement for flat finishes, then all test equipment and CTKs designed for on-equipment application will be toned down in flat colors. **(T-2)**

5.22.1. To prevent obscuring of instructions and possible damage to components, only exteriors of test equipment boxes will be toned down. **(T-2)**

5.22.2. Flight line test equipment and CTKs used to support mobility/contingency requirements will be toned down (i.e., gray, olive drab, brown, black or forest green). A camouflage pattern incorporating a combination of these colors may be used. **(T-2)**

5.22.3. Equipment not removed from back shops do not need to be toned down (i.e., test equipment, test benches, and mockups). **(T-2)**

5.22.4. Warranted CTKs. Name brand tool boxes received from base supply with corrosion. **(T-2)**

5.22.5. Service life warranties will not be painted solely to change color (this will void the manufacturer's warranty unnecessarily). The exception to this policy is if this equipment is deployed to support combat coded units with flat aircraft finishes. (T-2)

5.23. Alternate Mission Equipment (AME). AME will be painted IAW specific technical data. When such data does not exist, units will coordinate with the applicable item manager and HQ AFMC/A4M before changing paint schemes. **(T-2)**

DUKE Z. RICHARDSON, Brigadier General,
USAF
Director of Logistics & Sustainment

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

- TO 00-5-1, *AF Technical Order System*, 15 January 2013
- TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, 29 August 2013
- TO 1-1-8, *Application and Removal of Organic Coatings, Aerospace and non-Aerospace Equipment*, 26 July 2013
- TO 1-1-691, *Cleaning and Corrosion Prevention and Control, Aerospace and Non-Aerospace Equipment*, 5 August 2013
- TO 1B-1B-23, *Corrosion Control*, 1 November 2013
- TO 1B-2A-3, *Structures Repair Manual*, 24 August 2011
- TO 1B-52-8, *Location and Application Exterior Stencils, USAF Series B-52H Aircraft*, 15 March 2013
- TO 1C-17A-23, *System Peculiar Corrosion Control*, 10 May 2013
- TO 1C-135-3-8, *Location and Application - Exterior Stencils*, 31 January 2013
- TO 35-1-3, *Corrosion Prevention and Control, Cleaning, Painting, and Marking of USAF Support Equipment (SE)*, 5 August 2013
- AFPD 21-1, *Air and Space Maintenance*, 25 February 2003
- AFI 21-101, *Aircraft and Equipment Maintenance Management*, 26 July 2010
- AFI 33-360, *Publications and Forms Management*, 25 September 2013
- AFMAN 33-363, *Management of Records*, 1 March 2008
- AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, 15 June 2012

Adopted Forms

- AF FORM 847, *Recommendation for Change of Publication*
- AFTO FORM 95, *Significant Historical Data*
- AFTO FORM 781A, *Maintenance Discrepancy and Work Document*

Abbreviations and Acronyms

- ADCC**—Assistant Dedicated Crew Chief
- AFI**—Air Force Instruction
- AFMAN**—Air Force Manual
- AFMC**—Air Force Materiel Command
- AFPD**—Air Force policy Directive
- AFRIMS**—Air Force Records Information Management System

AFRL—Air Force Research Laboratory
AFSC—Air Force Specialty Code
AFSOC—Air Force Special Operations Command
AGE—Aerospace Ground Equipment
ALC—Air Logistics Complex
AMARG—Aerospace Maintenance and Regeneration Group
AME—Alternate Mission Equipment
AMXS—Aircraft Maintenance Squadron
ASM—Aircraft Structural Maintenance
BS—Body Station
COMACC—Commander, Air Combat Command
CPAB—Corrosion Prevention Advisory Boards
CPC—Corrosion Prevention Compound
CTK—Consolidated Tool Kit
CWO—Combat Wing Organization
DCC—Dedicated Crew Chief
ESTCP—Environmental Security Technology Certification Program
FS—Fuselage Station
HQ—Headquarters
IAW—In Accordance With
JA—Judge Advocate
LO—Low Observable
LRU—Line Replaceable Unit
MAJCOM—Major Command
MCC—Mission Commander
MDS—Mission Design Series
MIS—Maintenance Information System
MXG/CC—Maintenance Group Commander
NESHAP—National Emission Standards for Hazardous Air Pollutants
O&M—Operations and Maintenance
OG—Operations Group
OPR—Office of Primary Responsibility

QPL—Qualified Products List

SBIR—Small Business Innovation Research

SE—Support Equipment

SERDP—Strategic Environmental Research and Development Program

SPO—System Program Office

TO—Technical Order

UHG—Uniform Have Glass

WG/CC—Wing Commander

WL—Water Line

Attachment 2
AIRCRAFT MARKING

Table A2.1. Aircraft Marking

A-10

COMMAND INSIGNIA: 18 inch full color. Located both sides of vertical stabilizer, 9 inches aft of leading edge and centered on tail designator (ET or ED) and tail stripe.

ORGANIZATIONAL INSIGNIA: 18 inch full color. 1 inch aft of F-16 panel and 1/2 inch above F-18 panel.

UNIT DESIGNATOR: 24 inch letters. Level with center rudder hinge panel.

TAIL STRIPE: No more than 6 inches wide. Align with bottom seam of fin cap.

CREW NAMES: Not to exceed 1 3/4 inch block letters.

Pilot: Under left windscreen beginning at fuselage station (FS) 188.92.

Crew Chief: Under right windscreen beginning at FS 188.92

B-1B

COMMAND INSIGNIA: 18 inch subdued. Centered on the vertical stabilizer and centered between the unit designator and the upper most part of the vertical stabilizer.

ORGANIZATIONAL INSIGNIA: 18 inch subdued. Will be placed 6 inches below and centered on the defensive system operator window on the left side and the offensive system operator window on the right side.

UNIT DESIGNATOR: 24 inches. Letters (ED) will be centered on the vertical stabilizer, 10 inches above the call numbers.

NOTE. All paint used will be in accordance with FED STD 595, light gray 36118.

B-2

COMMAND INSIGNIA: 24 inch subdued. Located on left side of aircraft at FS 304.5 (center of crest), with crest bottom at WL 167.2

ORGANIZATIONAL INSIGNIA: 24 inch subdued. Located on right side of aircraft at FS 304.5 (center of crest), crest bottom at WL 167.2

UNIT DESIGNATOR: 16 inches (subdued) 30 degree negative slant. Top of unit designator is to be 15 inches from top of main landing gear door and 50 inches from extreme aft end of door.

TAIL STRIPE: The tail stripes will be 18 feet long by 11.25 inches high from leading edge to trailing edge of main landing gear doors.

NOSE NUMBER: Last five digits of tail number, 6 inches in height, 12 inches from bottom of nose gear door and centered.

CREW NAMES: (all measurements to top of letters)

Pilot: The word "PILOT" is centered on left half of nose gear door 8 inches from the top of the door in 1.75 inch letters. The pilot's name is centered below the word "PILOT," 13.5 inches from the top of the door.

Mission Commander: The word "MISSION COMMANDER" is centered on right half of nose gear door, 8 inches from top of door in 1.75 inch letters. The mission commander's name is centered below the word "Mission Commander," 13.5 inches from the top of the door.

Crew Chief/Assistant: The letters "DCC" (Dedicated Crew Chief) are centered on nose gear door, 26 inches from top of door, with 1.75 inch letters. The crew chief's name is centered 1 inch below "DCC" also in 1.75 inch letters. The letters "ADCC" (Assistant Dedicated Crew Chief) are centered 1 inch below the crew chief name in 1.75 inch letters and the assistant crew chiefs are centered below with 1 inch spacing from "ADCC," also in 1.75 inch letters.

AIRCRAFT NAME: (all measurements to top of letters)

"SPIRIT": located 10.5 inches from top of main landing gear door, 57 inches from extreme

forward of door in 8 inch block letters with a 30 degree negative slant.

"OF": located 19.5 inches down from top of main landing gear door, centered underneath the "SPIRIT" in 6 inch block letters with a 30 degree negative slant.

"STATE/CITY": located 26.5 inches from top of main landing gear door, centered beneath the "SPIRIT" in 8 inch block letters with a 30 degree negative slant

B-52

COMMAND INSIGNIA: 36 inch subdued. 18 inches below and centered on the first number of the radio call number from the leading edge on left and right side of the vertical stabilizer.

ORGANIZATIONAL INSIGNIA: 36 inch subdued. Place 6 inches aft of the three static sensors, and 6 inches below the pitot tube.

UNIT DESIGNATOR: 36 inches. 18 inches below the command insignia with the (ED) centered on the command insignia.

C-12

COMMAND INSIGNIA: 6 inch full color on both sides of the fuselage. Centered and located between the Pilot/Co-pilots window and most forward passenger viewing window.

COMMAND DESIGNATOR: (AFMC) 5-inch block white lettering (Color Number 17875) centered within the blue background stripe and located 1-inch forward of the rudder.

TAIL STRIPE: 8 inches wide on both sides of the vertical stabilizer. 6-inch dark blue background stripe (Color Number 15044) with 1- inch yellow stripe (Color Number 13538) bordering above and below background stripe.

CALL NUMBERS: 8 inch block numbers on both sides of the vertical stabilizer. 8 inch block numbers (Color Number 17038) located on WL .

U.S. FLAG: 24 inches wide by 14 inches high on both sides of the vertical stabilizer.

UNITED STATES AIR FORCE: 6 inches high on both sides of the fuselage. Located 1.5 inches above the passenger viewing windows and beginning 2 inches forward of the crew entry door.

C-17

COMMAND INSIGNIA: 18 inch subdued. AFMC insignia located above and centered above unit designator.

ORGANIZATIONAL INSIGNIA: 18 inches subdued.

18 inch, 412 Test Wing insignia located on left side of fuselage.

Vertical Station - Z 200.000. Horizontal Station - Y 450.250.

18 inch AFFTC insignia located on right side of fuselage.

Vertical Station - Z 200.000. Horizontal Station - Y 450.250.

UNIT DESIGNATOR: 36 inch block letters. 36 inch block letters "ED" located 40 inches above fuselage and centered between leading edge and trailing edge of the vertical stabilizer.

CALL NUMBERS: 15 inch block letters. Located below and centered on unit designator.

CREW NAMES: Crew Chief: 1 3/4 inch block letters located 6 inches above and centered over the crew entry door.

C/EC/KC/NKC-135

*COMMAND INSIGNIA: 24/36 inch subdued. Left side of fuselage. Vertical Station: FS 223.8. Horizontal Station: WL 200.0.

*ORGANIZATIONAL INSIGNIA: 24/36 inch subdued. Right side of fuselage. Vertical Station: FS 223.8. Horizontal Station: WL 200.0.

TAIL STRIPE: 28 inches wide. 20 inch blue stripe, 4 inch yellow stripe top and bottom.

COMMAND LETTERS: (AFMC) 12 inch letters centered in blue stripe.

CREW NAMES: Not to exceed 1 3/4 inch block letters above crew entrance door and centered on a black background that will accommodate the lettering.

*NOTE. Organizations locate insignia at your discretion. Maintain uniformity on all MDS.

**Solar resistant finishes are authorized for special purpose aircraft.

E-3

COMMAND INSIGNIA: 18 inch full color. Centered 12 inches fwd Sta 259.5. Top of insignia 40 inches above Stringer 19 on co-pilot's side

RESERVE COMMAND INSIGNIA: 18 inch full color--Commander ACC (COMACC) waiver. Centered 30 inches fwd of Sta 259.5. Lower point resting on Stringer 19 on co-pilot's side.

ORGANIZATIONAL INSIGNIA: 18 inch full color. Centered 12 inches fwd Sta 259.5. Top of insignia 40 inches above Stringer 19 on pilot's side.

RESERVE ORGANIZATIONAL INSIGNIA: 18 inch full color--COMACC waiver. Centered 30 inches fwd of Sta 259.5. Lower point resting on Stringer 19 on pilot's side.

UNIT DESIGNATOR: 24 inches (Gloss Black). Left side: Located 7 inches above the radio call number with the top corner of the first letter at the leading edge seam. Right side: Located 7 inches above the radio call number with the top corner of the last letter at the leading edge seam.

NOSE NUMBER: 6-inch (Gloss Black). Last four digits of tail number on left and right nose gear door.

CREW NAMES: Pilot, Mission Crew Commander (MCC), DCC and ADCC names will be mounted to a standard size plaque and affixed to interior body station 294.5. Titles: WING CMDR, OG CMDR, SQDN CMDR, ACFT CMDR, MCC, DCC, and ADCC

U.S. FLAG: 31.5 inches high by 60 inches long. Applied to both sides of the vertical stabilizer. The top of the American flag is located at Fin Station 210.15 with the forward top corner of each

flag resting on the vertical stabilizer leading edge seam.

F-15

COMMAND INSIGNIA: 18 inch full color. Centered between tall stripe and unit designator on outboard sides of both vertical stabilizers.

* ORGANIZATIONAL INSIGNIA: 18 inch full color. Vertical: Bottom of insignia on WL 100.0. Horizontal: Forward edge of insignia on F.S. 458.0.

UNIT DESIGNATOR: 24 inches. Vertical: Top letters even with top of rudder. Horizontal: Leading edge of the first letter on FS 760.0. Note: Unit designator and tail numbers will be black, color #37038

CREW NAMES: 1 3/4 inch block letters. Pilot: Centered on left windscreen frame. Crew Chief: Centered on right windscreen frame.

*NOTE: F-15E Aircraft with conformal fuel tanks installed. Forward edge organizational insignia 18 inches, bottom of insignia at WL 110.0, horizontal station: FS 454.00.

F-16

COMMAND INSIGNIA: 18 inch full color, contrast subdued. 22 inches below top of vertical stabilizer and centered. Applied to both sides.

ORGANIZATIONAL INSIGNIA: 10 inch full color, contrast subdued. Place Wing Insignia on the right side only of the fuselage centered at approximately FS 217 and WL 70, placed between panels 2310 and 2318 and the top of insignia is parallel to the top of panel 2318. Squadron Insignia that is applied will be applied to the left side only of the fuselage centered in the same area as the Wing Insignia.

UNIT DESIGNATOR: 41 inches below top of vertical stabilizer and centered.

TAIL STRIPE: 6 inch maximum width. 10 inches below top of vertical stab.

CREW NAMES: 2 inch block letters. Crew names may be in contrast gray color or flat black

vinyl decals. Pilot Name: Centered on left canopy rail. Crew Chief Name: Centered on right canopy rail.

OPTIONAL: Aircraft Markings may be done in flat black decals in place of contrasting shade of gray per T.O. 1-1-8 for application of decals. NOTE: Aircraft with LO coatings, to include F-16 aircraft with UHG, will use subdued insignias in contrasting shade of gray.

F-22

COMMAND INSIGNIA: 18 inches (silhouette - contrasting shade of gray). Vertical: Top of insignia applied 50.3" below the top of the vertical stabilizer. Horizontal: Centered on trailing edge aft unit designator letter.

WING INSIGNIA: 18 inches (silhouette - contrasting shade of gray). Vertical: Centered between the chine and bottom of the intake. Horizontal: Centered between the leading edge of the right side intake lip and right side weapons bay.

SQUADRON INSIGNIA: 18 inches (silhouette - contrasting shade of gray). Vertical: Centered between chine and bottom of the intake. Horizontal: Centered between the leading edge of the left intake lip and left side weapons bay.

UNIT DESIGNATOR: 24 inches. NOTE: Unit designator and tail numbers will be applied in a contrasting shade of gray). Vertical: Bottom of the letters applied 96.1" below the top of the vertical stabilizer. Horizontal: Bottom leading edge of the first letter is applied 28.8" aft of vertical stabilizer leading edge.

TAILSTRIPE: 6 inches. Any design applied in contrasting shades of gray applied to the upper most elements on both sides of the vertical stabilizers.

NOSE NUMBER: 4 inches (contrasting shade of gray). Last three/four digits of tail number applied vertically above the left and right avionics bay panels (4135 & 4165) just below the fuselage chine and forward of the fuselage formation light.

CREW NAMES: Vinyl stencils will be a maximum of 26 inches in length and will be 1.75 inches high in Brush Script CT. ACCT. A.K. Rev. E font in contrasting shade of gray. Color will be medium gray (P22326A) for names on all aircraft. Pilot: placed horizontally on the left outer nose gear door surface 6 inches aft of front edge and 5 inches from upper edge of door to top of

lettering. DCC/ADCC: DCC name is placed horizontally on the right outer nose gear door surface 6 inches aft of front edge and 4 inches from upper edge of door to top of lettering. The ADDC will be placed 1.5 inches below the DCC name.

F-35

COMMAND INSIGNIA: Overall height is 12 inches (silhouette - contrasting shade of gray); bottom of the insignia will be centered 47 inches above the bottom edge of the blackboard and centered fore to aft in the vertical stabilizer blackboard area.

WING INSIGNIA: Overall height is 12 inches (silhouette - contrasting shade of gray); insignia will be centered within the blackboard area on the right side inlet below the chine and formation light.

SQUARDON INSIGNIA: Overall height is 12 inches (silhouette - contrasting shade of gray); insignia will be centered within the blackboard area on the left side inlet below the chine and formation light.

UNIT DESIGNATOR: Overall height is 12 inches (silhouette - contrasting shade of gray); bottom of the designator will be centered 25 inches above the bottom edge of the vertical stabilizer blackboard.

NAF, WG, OP GP, OP SQ TAIL IDENTIFIER: (Used only on flagship aircraft) Overall height is 6 inches (silhouette - contrasting shade of gray); bottom of the identifier will be 14 inches above the bottom edge of blackboard area, centered between forward and aft blackboard edges.

TAIL STRIPE: Not allowed for F-35 aircraft.

CALL NUMBER: Overall height is 6 inches (silhouette - contrasting shade of gray); bottom of the tail number will be centered 2 inches above the bottom edge and 2.6 inches from the inner most trailing edge corner of the vertical blackboard area.

NOSE NUMBER: Overall height is 4 inches (contrasting shade of gray); nose numbers will be located four inches from the inboard door forward apex (BL 0) and two inches from BL 0 door edge.

CREW NAMES: Two inches in height; Pilot: End of name will be located two inches forward of inboard aft apex (BL 0) and two inches from BL 0 door edge (left NLG door); Crew Chief:

Beginning of name/rank will be located two inches forward of inboard aft apex (BL 0) and two inches from BL 0 edge (right NLG door).

Note: All lettering/numbering applied to F-35 blackboard areas will meet vertical block type/style font/lettering and Arabic numerals as specified in Technical Order 1-1-8, Appendix B, Figure B-3 (Form of Letters and Numerals) or similar computer generated font.

T-38

COMMAND INSIGNIA: 10 inch full color insignia applied to both sides of vertical stabilizer, 1 inch above and centered on unit designator.

ORGANIZATIONAL INSIGNIA: 10 inch full color insignia applied to both sides of the fuselage. 3 inches aft of leading edge of the first backbone panel and 1 inch above lower edge of backbone panel.

UNIT DESIGNATOR: 23 inches below tail stripe and centered on vertical stabilizer.

TAIL STRIPE: 6 inches maximum width, 12 inches below top of fin cap.

CREW NAMES: Not to exceed 1 3/4 inch block letters. Crew names may be in contrast gray color or gloss black vinyl decals. Pilot Name: Centered on left canopy rail. Crew Chief Name: Centered on right canopy rail.

OPTIONAL: Aircraft Markings may be done in gloss black vinyl decals in place of contrasting shade of gray per T.O. 1-1-8 for application of decals.

H-1

COMMAND INSIGNIA: 10 inch full color insignia, left side of aircraft on post and centered between pilot's door and aft cargo door, even with pilot's door handle.

ORGANIZATIONAL INSIGNIA: 10 inch full color insignia, left side of the aircraft. Vertical Station: W.L. 33. on forward cargo door, centered and even with command insignia Horizontal Station: F.S. 80.

UNIT DESIGNATOR: 10 inch insignia IAW T.O. 1-1-8.

TAIL STRIPE: 6 inches maximum width. 6 inches below top of tail rotor boom.

CREW CHIEF NAMES: 2 inch block letters. 2 inches below crew door window and centered on door. NOTE: Organizational insignia and unit designator markings need to be 10 inch due to aircraft size. These markings will not fit due to area not being large enough and fasteners in the way will detract from overall appearance.