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AIR EDUCATION AND TRAINING
COMMAND**



**AIR EDUCATION AND TRAINING
COMMAND INSTRUCTION 21-106**

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CORROSION CONTROL

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This instruction implements AFD 21-1, *Air and Space Maintenance*, and AF1 20-114, *Air and Space Equipment Structural Management*. It establishes AETC corrosion control guidance and procedures and assigns responsibilities for implementing and maintaining an effective corrosion control program for aircraft; aerospace ground equipment (AGE); electronic equipment; support vehicles; communications, electronics and meteorological (CEM) equipment; and all other end items relative to the functions of AETC. It does not apply to AETC-gained Air Force Reserve Command units or Air National Guard units. **Tiered wavering is not authorized for the information contained in this publication. Waiver requests are completed by accomplishing the procedures listed in section 2.24 and submitting the waiver package to aetca4mss@us.af.mil.** Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional's chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <http://www.my.af.mil/afirms/afirms/afirms/rims.cfm>.

This document has been substantially revised and must be completely reviewed. Major changes include: Overdue aircraft wash documentation and reporting instructions have been updated (1.2.3.7.1); aircraft transfer requirements have been updated; aircraft marking information has been updated (Attachment 2); F-22 aircraft information has been removed (Attachment 3).

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Chapter 1

CORROSION PREVENTION CONTROL

1.1. General. Orient command, base, and unit corrosion control programs toward preventing corrosion through the timely inspection and proper treatment of aerospace vehicles and support equipment to include proper maintenance of protective finishes and ensuring equipment cleanliness. Deviations from this instruction are not authorized without prior approval from HQ AETC/A4M.

1.2. Responsibilities. HQ AETC/A4M is responsible for corrosion prevention and control programs throughout the command. According to AFI 20-114, *Air and Space Equipment Structural Management*, HQ AETC/A4M must appoint a corrosion functional manager to monitor the command's programs and serve as a point of contact for corrosion control activities.

1.2.1. Maintenance Group Commander (or equivalent):

1.2.1.1. Establish and maintain effective corrosion prevention and control program for all unit assigned mission design series (MDS) aircraft and AGE.

1.2.1.2. Review item or system manager-devised equipment or weapon system corrosion inspection work cards to ensure local corrosion inspection requirements are met.

1.2.1.3. Ensure development of local corrosion inspection work cards if the item or system manager has not provided specific requirements.

1.2.1.4. Establish local checklists for aircraft wash inspections in accordance with Technical Order (TO) 00-5-1-WA-1, *AF Technical Order System*, if Air Force technical data is not available. Coordinate all local work cards through HQ AETC/A4MSS.

1.2.1.5. Ensure corrosion familiarization courses conducted by the unit are reviewed by the maintenance training section (MTS) and the aircraft structural maintenance shop chief or civilian equivalent.

1.2.1.6. Monitor facilities to ensure they are adequate to meet mission requirements and to ensure proper levels of equipment, work force and material funding is available to support a sound corrosion control program.

1.2.1.7. Ensure an aircraft wash rack supervisor is appointed for each shift where aircraft washes are performed.

1.2.2. Aircraft Structural Maintenance Shop Chief, Corrosion Shop Chief, or Civilian Equivalent:

1.2.2.1. Publish an operating instruction to include, but not limited to, the following areas of interest:

1.2.2.1.1. Local and MDS specific corrosion prevention training requirements.

1.2.2.1.2. Identification and placement of approved designated symbols and unique markings (such as, state names and symbols) on wing, operations group (OG), and flying squadron commander aircraft with designation and markings.

- 1.2.2.1.3. Local unit marking requirements; for example, tail stripes, crew names, nose art (if approved), etc.
- 1.2.2.1.4. Travel pod care and responsibilities, marking, and disposition.
- 1.2.2.1.5. Aircraft paint identification placard size, shape, and information requirements.
- 1.2.2.1.6. Aircraft paint and support equipment paint scoring procedures.
- 1.2.2.1.7. Minimum wash rack personal protection equipment in relation to the type detergent in use, environmental conditions and authorized limits set by the local safety office, bioenvironmental engineering office, and specific Material Data Safety Sheets (MSDS).
- 1.2.2.2. Ensure corrosion inspections are accomplished during each phase and/or periodic inspection for assigned aircraft.
- 1.2.2.3. Ensure corrosion prevention and treatment procedures are performed in accordance with applicable TO and other Air Force directives.
- 1.2.2.4. Ensure only authorized chemicals, materials, and corrosion removal methods are used and material safety data sheets are available for each chemical in stock.
- 1.2.2.5. Ensure required equipment is obtained to support an effective corrosion prevention and control program.
- 1.2.2.6. Ensure wash crew supervisors are trained in all aspects of aircraft wash and develop local aircraft specific wash cards if none are available.
- 1.2.2.7. Enforce the use of approved coating materials and cleaning compounds on assigned aircraft and support equipment (as determined by applicable technical orders and the Air Force Corrosion Prevention and Control Office).
- 1.2.2.8. Ensure the unit's corrosion-related training courses are applicable to the type aircraft and environment. Local training programs may be initiated as deemed necessary due to local corrosive environment, weapon system corrosion susceptibility, and forward operating environments. Perform this type training initially and on an annual basis.
- 1.2.2.9. Determine the adequacy of corrosion control work cards for assigned equipment based on mission and location.
- 1.2.2.10. Ensure aircraft structural maintenance personnel (Air Force specialty code [AFSC] 2A7X3 or civilian equivalent) receive pre-placement, special purpose, periodic and termination physicals as determined by local medical group aeromedical services.
- 1.2.2.11. Ensure aircraft structural maintenance personnel receive, are fit tested, and use proper respiratory and personal protective and safety equipment as determined by the local medical group aeromedical services.
- 1.2.2.12. Ensure strict compliance with the latest federal, state, and local environmental laws pertaining to hazardous material handling and waste disposal.
- 1.2.2.13. Provide occupational safety, fire prevention, and health training to aircraft structural maintenance personnel as required by base instructions, AF instructions, and

Air Force Occupational Safety and Health standards. Ensure the bioenvironmental Engineering office conducts occupational health evaluations and annual inspections required by AFI 48-145, *Occupational and Environmental Health Program*, to determine adequacy of worksite controls against occupational hazards.

1.2.2.14. Ensure that all equipment necessary to manage effective corrosion prevention and control program is available and properly maintained.

1.2.2.15. Ensure routine maintenance and cleaning of corrosion control facilities is performed to ensure an effective program and to minimize safety and health hazards.

1.2.2.16. Report all program deficiencies through supervision with info copies to HQ AETC/A4MSS.

1.2.2.17. Participate in aerospace equipment corrosion prevention advisory boards that are mission related.

1.2.2.18. Participate in other corrosion-related programs and meetings necessary to meet mission needs.

1.2.2.19. Provide corrosion control support and technical expertise to base and tenant organizations whose requirements exceed their capabilities. Forward all requests to the contracting officer for review if a contractor is involved, and a host-tenant support agreement and/or a memorandum of agreement do not cover the situation.

1.2.2.20. Maintain copies of all approved waivers to this instruction.

1.2.3. Aircraft Wash Rack Unit. The unit owning the aircraft will:

1.2.3.1. Monitor, schedule, and record aircraft washes.

1.2.3.2. Enter wash requirements on the aircraft forms.

1.2.3.3. Ensure wing plans and scheduling function monitors and schedules aircraft washes.

1.2.3.4. Ensure unprotected lubrication points are lubricated before the next flight or as specified in applicable directives and aircraft forms are documented to reflect time and date of completion.

1.2.3.5. Ensure no other maintenance is accomplished on the aircraft or equipment during corrosion prevention treatment when hazardous and toxic materials are in use. Additionally, require the use of respiratory protective equipment as necessary.

1.2.3.6. Due to safety considerations, assign at least two personnel to the aircraft wash crew. The aircraft wash crew will include the dedicated crew chief or the assistant (does not apply to contractor operations). Assign additional personnel as required.

1.2.3.7. Establish and enforce procedures and controls to ensure exterior and interior (as applicable) cleaning is accomplished at frequencies adequate to maintain an effective program for aircraft and support. Minimum aircraft wash cycles are established in TO 1-1-691-WA-1, Aircraft Weapons Systems—Cleaning and Corrosion Control and are strictly enforced. Minimum aircraft washes may be accelerated at the owning unit's discretion.

- 1.2.3.7.1. Units should make every effort to accomplish washes within prescribed timelines. However, there may be circumstances that require a wash to be postponed for a short period of time (30 days or less). Report aircraft washes overdue more than 30 days with an official memo to HQ AETC/A4M no later than (NLT) seven days after the 30-day overdue date. When aircraft are located in severe corrosion environments, the overdue wash reporting requirement is NLT 15 days. Aircraft “hard broke” (e.g. Red X condition) will be washed NLT 30 days after the condition preventing the wash is cleared. If not washed within 30 days, report the non-wash in accordance with this instruction. Within the official memo, clearly state the reason and/or justification for overdue status, anticipated get well date, and corrective action(s) taken to prevent future occurrences
- 1.2.3.8. Wash and clean aircraft. Flight line personnel may receive cross-utilization training (CUT) to perform aircraft post-wash cleanliness inspections. Units electing to CUT flight line personnel to perform after wash inspections must have these personnel trained by a qualified 2A773 aircraft structural maintenance craftsman (or civilian equivalent) and the training documented in the individual's training records.
- 1.2.4. Aircraft Wash Rack Supervisor:
- 1.2.4.1. Must hold at least a 5-skill level or civilian equivalent and have an aircraft maintenance AFSC.
- 1.2.4.2. Must be trained on proper wash procedures by the aircraft structural maintenance shop chief or civilian equivalent and have this training signed off in his/her training records as per paragraph 1.7 of this instruction.
- 1.2.4.3. Aircraft Wash Rack Supervisor will ensure:
- 1.2.4.3.1. Wash crew personnel are task trained and qualified.
 - 1.2.4.3.2. Personnel using these facilities are familiar with instructions contained in TO 1-1-691-WA-1, concerning safety and precautionary measures, treatment, and disposal of wash rack waste.
 - 1.2.4.3.3. Appropriate number and size of serviceable fire extinguishers are readily available.
 - 1.2.4.3.4. Water hoses, pumps, motors, explosion- and vapor-proof electrical fixtures and high-pressure equipment are properly monitored, maintained and serviceable.
 - 1.2.4.3.5. Approved safety and health procedures are followed.
 - 1.2.4.3.6. All wash crew personnel are trained on proper use of safety and personal protective equipment and wash rack procedures before starting any washes IAW paragraph 1.7 of this instruction.
 - 1.2.4.3.7. The wash rack is kept clean and properly maintained and foreign-object walks are performed at the beginning and end of each scheduled work shift.
 - 1.2.4.3.8. Maintenance stands are routinely inspected, documented for serviceability and are properly and safely used.

1.2.4.3.9. Waste treatment and drainage systems are inspected daily and serviced at proper intervals to preclude overflow of polluting agents.

1.2.4.3.10. Sufficient covered, nonflammable waste receptacles are available and properly marked.

1.2.4.3.11. Once aerospace equipment washes are completed, supervisor signs the appropriate aircraft forms or equipment record and clears any discrepancies in the maintenance information system (MIS) to document this action.

1.2.4.3.12. Lubrication requirements are entered in the records.

1.3. Aircraft Corrosion Prevention.

1.3.1. Qualified 2A7X3 aircraft structural maintenance (or civilian equivalent with a corrosion control job description) personnel will perform aircraft corrosion inspections. All maintenance personnel, regardless of AFSC, will examine all on- and off-equipment parts for corrosion. When corrosion discrepancies are discovered that are beyond the using organization's capability to evaluate or repair, consult with an aircraft structural maintenance specialist. Enter all discrepancies noted during these inspections in the aircraft forms for corrective action. **Note:** Avionics maintenance personnel are responsible for inspecting pins and sockets of disconnected electrical connectors, avionics line replaceable units, inside equipment drawers, etc., for corrosion. The crew chief must replace any hardware, such as nuts, bolts, pins, etc., when corrosion is found.

1.3.2. Maintenance personnel who remove and install aircraft panels and doors must ensure permanent seals are serviceable and sealant (temporary) is applied to panels and fasteners as specified in the weapon system TO (-23). For general information on aircraft corrosion prevention, refer to TO 1-1-691-WA-1.

1.3.3. The aircraft structural maintenance shop chief (or civilian equivalent) serves as the technical expert to local commanders and HQ AETC/A4MSS.

1.4. Aerospace Ground Equipment (AGE).

1.4.1. Owing work center supervisors are responsible for ensuring an effective corrosion program is enforced for assigned equipment.

1.4.2. To the maximum extent possible, the owning work center performs corrosion prevention and treatment. Corrosion repair and paint application will only be performed in approved facilities by qualified corrosion control technicians.

1.4.3. All AGE personnel will be familiar with proper corrosion prevention and control. The MTS, in conjunction with the aircraft structural maintenance shop chief (or civilian equivalent), serves as the focal point for corrosion orientation training. See paragraph 1.7 of this instruction.

1.5. Facilities. To conduct an adequate corrosion control and prevention program, each unit with permanently assigned aircraft and aerospace equipment should have, as a minimum, the following facilities:

1.5.1. Wash rack capable of capturing contaminated runoff. Wash rack should provide some measure of climate control offering the capacity to wash aerospace equipment year-round. **Note:** Aircraft washes and rinses are prohibited within general maintenance hangars, unless

specifically designed to support such operations. This requirement can be satisfied with any one of the following:

1.5.1.1. Specially designed corrosion control facility completely enclosed and heated with environmentally controlled ventilation and waste disposal systems equipped with utilities necessary for accomplishing all facets of aircraft corrosion control.

1.5.1.2. An enclosed or covered wash rack connected to a wastewater treatment system (such as an oil and water separator) if required by the wastewater treatment authority. See your base civil engineering department for further direction.

1.5.2. An open wash rack with hazardous waste containment for use on an interim basis where weather permits.

1.5.3. A corrosion control shop meeting the requirements outlined in AFI 32-1024, *Standard Facility Requirements*, for support equipment and aircraft-related off equipment parts. Incorporate this capability in the aircraft corrosion control facility if space permits.

1.5.4. Facility for touchup painting of assigned aircraft on a year-round basis (approved by base safety office, base bioenvironmental Engineering office, base civil engineering, and the base fire department).

1.5.5. All units with permanently assigned aircraft or aerospace equipment that operate and maintain corrosion control facilities shall abide by the Corrosion Control Facility Housekeeping requirements in AFI 21-101, *Aircraft and Equipment Maintenance Management*.

1.5.6. All sustainment, restoration and modernization projects associated with corrosion control facilities, shall abide by the applicable requirements listed in UFC 4-211-02, *Aircraft Corrosion Control and Paint Facilities*.

1.6. Corrosion Deficiencies Documentation.

1.6.1. Accurate documentation of maintenance actions performed in support of the corrosion control program is essential to justify future staffing, training, parts, equipment, and material procurement requirements.

1.7. Training.

1.7.1. All maintenance personnel who work on aircraft, aircraft components, and aerospace ground and support equipment, regardless of AFSC (excluding corrosion work center assigned personnel) will receive corrosion prevention and control training. Newly assigned personnel will receive initial corrosion prevention and control training during block training. Each unit must develop and implement corrosion prevention and control training program. Training curricula must include, but not be limited to:

1.7.1.1. Corrosion identification procedures and techniques.

1.7.1.2. Familiarization with aircraft and equipment corrosion prone areas.

1.7.1.3. Reporting and documentation procedures for corrosion.

1.7.1.4. Removal procedures and treatment of minor corrosion.

1.7.1.5. Proper use of cleaning compounds and the qualified products list.

1.7.2. Tailor corrosion training courses to meet local needs. Document completed training in the appropriate MIS. Accomplish initial and recurring training during block training. In addition, the MTS must review the courses with the aircraft structural maintenance shop chief (or civilian equivalent) to ensure adequacy and currency.

1.8. Acquisition of New Products for Use on MDS. The Qualified Products Listing (QPL) shall be used in conjunction with aircraft/equipment technical order's to determine which products can be safely used. Use of non mil-spec approved products can lead to degradation of aircraft components that are not easily detected until a failure occurs. Do not test or use any new products on command aircraft that are not identified in the respective aircraft TO without prior approval from HQ AETC/A4MSS and/or the applicable system program manager (SPM).

Chapter 2

PAINTING AND MARKING OF AEROSPACE VEHICLES

2.1. General. This chapter implements the guidance outlined in AFI 20-114. It provides guidance for applying and maintaining aircraft topcoats and applying command-approved non-USAF standard aircraft markings as authorized in TO 1-1-8-WA-1, *Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment*, applicable to Air Force aircraft, applicable aircraft-specific TOs and operational and ground trainer aircraft assigned to AETC. (**Note:** Not applicable to static display aircraft. The owning unit's history office manages static display aircraft.)

2.2. Responsibilities. Wing commanders, group commanders, or equivalents, and aircraft structural maintenance element chiefs are responsible for complying with the provisions of this chapter. (**Note:** For the purpose of this instruction, when only a group is assigned; the group commander assumes the wing commander role.) Only aircraft markings specifically authorized by TO 1-1-8-WA-1, applicable aircraft-specific TOs, and this instruction can be applied to aircraft. The AETC commander is the final approval authority for any paint scheme alteration on assigned AETC aircraft which includes nose art and all other markings not authorized in the applicable aircraft technical order and this instruction. HQ AETC/A4M is the final approval authority for flagship selections and tail flash (tail stripe) designs that meet all specifications stated within this instruction. HQ AETC/A4MSS is the point of contact for all aircraft painting and markings as specified in this instruction. HQ ACC/A4MS is the point of contact for all aircraft unit designators. **Note:** Process requests to this instruction according to paragraph 2.24.

2.3. Appearance Standards.

2.3.1. All aircraft markings and basic paint schemes must be maintained intact and be legible, distinct in color and present a professional appearance. Standardization of paint schemes and markings by MDS are of primary concern.

2.3.2. Units must evaluate and document (score) the condition of aircraft topcoats at least twice yearly to determine soundness for corrosion protection and appearance standards (see paragraph 2.4 of this instruction for more information).

2.3.3. Use touchup (sectional) painting to the maximum extent possible to maintain proper corrosion protection and appearance standards as opposed to full aircraft overcoats.

2.3.4. Each unit must establish and manage an aircraft touchup program with the aim of maintaining a sound and serviceable topcoat. All command aircraft and helicopter units should plan to scuff, sand, and topcoat aircraft at least twice before considering a complete strip and repaint. Aircraft with predetermined paint cycles such as programmed depot maintenance (PDM), weapon-specific TO directives can base the paint cycle requirements according to those directives. Units should rely on touchup painting between scheduled PDM paint cycles for large aircraft, such as C-17, C-130, KC-46 and KC-135. Only authorized coatings identified in TO 1-1-8-WA-1 and/or weapon system specific directives can be used to touch up paint. (**Note:** Under no circumstances can spray paint in aerosol cans be used to topcoat aircraft or support equipment exteriors, unless authorized by specific directives.)

2.3.4.1. Maintain ground instructional trainer aircraft (GITA) according to this instruction (excluding the requirement to strip aircraft and the mandatory use of coating systems specified in TO 1-1-8-WA-1 or weapons system specific corrosion directives).

2.3.4.2. A unit option is to topcoat GITA with a commercial direct-to-metal (DTM) paint. DTM paint is an acrylic latex paint that is easy to apply and environmentally friendly. DTM paint can be applied using a standard paint roller or brush and the aircraft does not require a painting facility. **Note:** Units that can maintain aircraft with current polyurethane paint are encouraged to do so, because DTM paint has a shorter service life and will require frequent touchups and/or repaints.

2.3.5. Use polyurethane protective tapes for AETC aircraft when authorized as an option in the applicable aircraft -23 series TOs.

2.3.6. Do not base the decision to strip an aircraft on timeframe alone. Base the decision to media blast on the following criteria.

2.3.6.1. Aircraft must be top-coated a maximum of three times before being stripped; this includes the original paint. (**EXCEPTION:** T-6 aircraft will not be fully scuff-sanded and over coated without being completely stripped. The aircraft will not be stripped any sooner than the 8-year point unless approved by the T-6 SPM.)

2.3.6.2. Strip aircraft as necessary to meet weight and balance requirements.

2.3.6.3. Aircraft that have undergone or are scheduled for extensive structural modification and/or maintenance may be stripped at the discretion of the owning unit.

2.3.6.3.1. Thoroughly inspect aircraft for structural defects at home station. Make every attempt to repair and/or document all structural defects before the aircraft departs home station.

2.3.6.3.2. After stripping, regional facility personnel must accomplish minor structural repairs that can be accomplished within contract limitations. Aircraft found to have significant structural damage must be repaired at the expense of the unit or sent back to home station for repair.

2.3.6.4. Do not strip aircraft within 3 years of programmed deactivation unless approved by HQ AETC/A4MSS.

2.3.7. The responsibility for determining acceptable paint condition rests with wing commanders and fabrication flight chiefs ensuring the guidance set forth in TO 1-1-691, TO 1-1-8-WA-1, applicable -23 series TOs, and this instruction is not violated.

2.3.8. Document on AFTO 95, *Significant Historical Data*, each time a major paint touchup (painting of more than 40 percent of an aircraft), complete scuff sand, overcoat, overspray and/or complete stripping and repainting of an aircraft is accomplished. Refer to TO 1-1-8-WA-1 for additional information.

2.4. Aircraft Paint Scoring Procedures.

2.4.1. Semiannually score and rank order aircraft using a locally developed paint scoring form or automated program. As a minimum, document a complete description of what type and where the defect exists, (peeling, flaking, oxidation, discoloration, and staining of the

paint), and measure the degree of paint degradation on a scale from 1 to 5; the number 1 indicates a good paint coat and number 5 indicates the worst.

2.4.2. The corrosion control work center must document coating defects into a local tracking form or program for each aircraft; detail what type of paint deterioration and what areas of the aircraft need paint. These products must be kept on file until full strip and repaint is accomplished. All aircraft painting will be scheduled with a priority of “worst case” basis first. Note: F-35 aircraft do not require paint scoring.

2.5. Marking Application Methods. The following are approved methods for applying aircraft markings to all AETC aircraft (refer to TO 1-1-8-WA-1 for more information):

2.5.1. Silk Screen Printing. Do not use this method on aircraft surfaces that are contoured or have protruding screws, rivets or bolts that will result in illegible or unprofessional- looking markings. When used, procure silk screen printing kits using local purchase procedures with organizational and maintenance funds. Local contracting offices can identify vendors.

2.5.2. Decals. Units are responsible for procuring their own organizational decals.

2.5.3. Stenciling. Apply markings using stencils. All colors must conform to applicable technical data.

2.5.4. Vinyl. Apply markings using vinyl decals generated on computerized stencil machines instead of stenciling with paint. (**Note:** These vinyl markings tend to peel when applied to porous paints such as camouflage or on supersonic aircraft.) Ensure materials are properly adhered to and colors conform to those prescribed in applicable weapon system technical data.

2.6. Command Insignia. Application of command insignia on USAF aircraft is mandatory. F-16 and trainer aircraft must apply full color insignias; helicopters, low observable, and cargo aircraft must apply subdued insignias, unless otherwise authorized. Specific application for each MDS is located in Attachment 2. Note: Not applicable to special operations aircraft.

2.7. Organizational Insignia. Application of organizational insignias is optional; however, if used standardize insignias throughout the wing. Apply organizational insignias to both sides of the aircraft. If squadron insignias are not used, apply wing or group insignias to both sides of the aircraft. Apply squadron insignias to the left side of the aircraft with the wing or group insignia on the right side. Units not having organizational insignias may apply the next higher organizational insignia. Specific application for each MDS is located in Attachment 2. **Note:** All new designs will be routed through AETC/A4M for approval before being applied to aircraft.

2.8. Tail Numbers. Aircraft tail numbers are mandatory. The tail numbers must be located below the unit designator on the vertical stabilizer and or tail-boom pylon. Specific placement for each MDS is located in Attachment 2.

2.9. Unit Designator. Unit designators are mandatory for all AETC aircraft unless otherwise authorized by AETC/CC. HQ ACC/A4MS is the office of primary responsibility for the assignment of unit designators. Submit all requests for approval of unit designators through HQ AETC/A4MSS to HQ ACC/A4MS. Specific placement for each MDS is located in Attachment 2. Note: Not applicable to special operations aircraft.

2.10. Tail Flashes (Tail Stripe). Tail flashes are used to identify a specific wing, group, squadron, or flight. Wing commander’s may develop a tail flash design and request AETC/A4M

approval for application. The wing commander may choose a single wing tail stripe design or distinctive tail stripes for each squadron or flight. Submit AETC Form 1236, *Request for Improving/Changing AETC Maintenance Publication*, to HQ AETC/A4MSS for AETC/A4M approval. Apply the tail stripe to the vertical stabilizer and or tail-boom pylon. It must be in the form of a straight stripe. The height must not exceed 15 inches for trainer, fighter aircraft, and helicopters, or 24 inches for cargo and refuel aircraft. In addition, the tail stripe must not contain more than four distinct colors. Variations in length, width, font size, font type, and colors added to a previously approved tail stripe are not authorized. Specific placement for each MDS is located in Attachment 2. **Note:** All other aircraft paint scheme alterations, markings, and nose art; to include tail flash (not authorized in applicable TO or this instruction) will still require approval by HQ AETC/CC.

2.11. Aircrew and Crew Chief Names. Unit options are to apply aircrew, crew chief, and assistant crew chief names to aircraft. Aviator names are permitted for aircrew. Crew chief and assistant crew chief names must consist of rank and name (first, last) only. Operations group commanders (OG/CC) must approve or disapprove tasteful aviator names ensuring no discredit is brought upon AETC, the Air Force, or the Department of Defense. Acceptable examples include Captain William A. “Smitty” Smith and Major Wayne “Jonesy” Jones. **Note:** Tactical call signs are prohibited.

2.11.1. Lettering styles are unit options, but must not exceed 3 inches in height. All aircraft in the wing must be standardized by MDS with the exception of designated commander's aircraft, which may have different lettering that does not exceed 3 inches in height.

2.11.2. A background block for the names may be used to encompass the names. The block must be in contrasting colors to the section applied and may be preceded by an eagle head, falcon head, tiger head, etc.

2.12. Commander's Flagships. Commander's flagships referred to in this instruction are those aircraft selected to represent the commander's position. Only MAJCOM, wing, operations group, and flying squadron commanders are authorized designated flagships. (**Note:** “Flying squadron commander” refers to a commander of a squadron with a flying mission.) If a flagship is selected, only one aircraft is authorized per flying commander. Bases and units with more than one type MDS assigned must select only one type aircraft for the wing and operations group flagships. Flying squadron commanders may select one aircraft for designation as a flagship. After selection, submit an AETC Form 1236 to HQ AETC/A4MSS for review. AETC/A4M is the final approval for all flagship selections. Apply flagship markings as follows: **Note:** Any flagship design not authorized by this instruction will require approval by HQ AETC/CC.

2.12.1. Major Command (MAJCOM) Flagship. When approved by AETC/A4M, a MAJCOM commander's flagship may be authorized at the base where the commander is assigned. The aircraft tail number may be replaced by the command designator but must remain the same size as the original tail number. Move the tail number to another location on the aircraft, in a smaller size, on or as close to the vertical stabilizer as possible.

2.12.2. Wing (FTW) Flagship. When approved by AETC/A4M, the tail number of the wing commander's flagship number may be replaced by the organization alphanumeric designator (such as, 12 FTW), but must remain the same size as the original tail number. Move the tail number to another location on the aircraft, in a smaller size, on or as close to the vertical stabilizer as possible. Organizations may apply unit insignias to the aircraft. When used,

place wing insignias on the right side of the aircraft with the owning squadron's insignia on the left side. A collage of assigned flying squadron insignias may be applied to the left side of the aircraft in place of a single squadron emblem.

2.12.3. Operations Group (OG) Flagship. When approved by AETC/A4M, the tail number of the OG/CC flagship may be replaced by the group alphanumeric designator (such as, 12 OG), but must remain the same size as the original tail number. Move the tail number to another location on the aircraft, in a smaller size, on or as close to the vertical stabilizer as possible. Organizations may apply unit insignias to the aircraft. When used, place wing insignias on the right side of the aircraft with the owning squadron's insignia on the left side. A collage of assigned flying squadron insignias may be applied to the left forward area of the fuselage instead of a single squadron emblem.

2.12.4. Flying Training Squadron (FTS) Flagship. When approved by AETC/A4M, the tail number of a flying squadron commander's flagship may be replaced by the squadron alphanumeric designator (for example, 560 FTS), but must remain the same size as the original tail number. Move the tail number to another location on the aircraft, in a smaller size, on or as close to the vertical stabilizer as possible. Organizations may apply unit insignias to the aircraft. When used, place wing insignias on the right side of the aircraft with the owning squadron's insignia on the left side. A collage of assigned flying squadron insignias is not authorized on these aircraft.

2.12.5. Shadowing. Shadowing of unit designators and tail numbers or organizational alphanumeric designators is authorized for all aircraft designated as flagships, at the wing commander's discretion. Apply shadowing in a conservative color that complements the overall paint scheme of the aircraft (normally black, white, or gray).

2.12.6. Commander's Unique Tail Flash (Tail Stripe). Tail flash design must be approved by AETC/A4M prior to application. The tail flash must meet the specifications outlined in paragraph 2.10 of this instruction.

2.13. Nose Art. Do not apply nose art to AETC assigned aircraft without approval of the AETC/CC. If approved, the wing commander must select a candidate aircraft for application of the approved nose art. All nose art must be in good taste, be representative of the local community and be gender neutral. AETC assigned active aircraft shall not be used for memorialization purposes. **Note:** Be aware of potential copyright infringement when selecting nose art. It is highly recommended that nose art be applied to only one of the flagships authorized in paragraph 2.12 of this instruction.

2.14. Aircraft Travel Pods. Paint travel pods the same color as the associated aircraft. For ease of cleaning and appearances, units with aircraft painted in camouflage paint schemes may apply gloss paint to travel pods, but it must match the color and paint design of the aircraft. Units with multicolor aircraft must select one primary color for the travel pod. Travel pods designated for commander flagships 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 pilot. Lettering must not exceed 4 inches in height and may be any color and font style. Submit an AETC Form 1236, plus photographs to HQ AETC/A4MSS for review and AETC/A4M approval.

2.15. Paint Identification Block. The paint identification block is mandatory for all aircraft assigned to AETC. Apply as specified in TO 1-1-8-WA-1, including the last strip date. The block may be of a unique design such as an eagle head, state outline, etc.; however, it must not exceed 6 inches by 6 inches in size and must match the color of other markings on the aircraft. AETC/CC is the approval authority for all unique designs.

2.16. Aircraft Nose Numbers. Aircraft nose numbers are authorized as a unit option. Numbers must be in block or Helvetica style letters, not exceed four digits and be applied to the nose of the aircraft. Specific location for each MDS is located in Attachment 2.

2.17. Bird of Prey Silhouette. Bird of prey silhouettes are authorized on F-16 aircraft as a unit option, standardized within a wing by MDS. Place the silhouette on both sides of the aircraft aft canopy on the forward area of the backbone in a contrasting shade of gray to the area being applied. The silhouette must not exceed 18 inches in height. See Attachment 2 for specific placement.

2.18. Gun Ports. Gun ports may be painted flat black as a unit option. MDS standardization in a wing is required. Do not polish gun ports on any aircraft due to corrosion considerations.

2.19. Aerial Victory Markings. AETC aircraft may include a 4-inch star to represent an aerial victory. Position the star just below and forward of the canopy assembly. The credited pilot's name must appear as the pilot of the aircraft. Identify Desert Storm victories with a green star. Aircraft that have flown combat missions and are credited with bona fide hits or kills may be identified with a uniquely designed marking. This marking must be conservative in nature and not exceed 4 inches by 4 inches. If multiple hits or kills are credited, a numerical indicator may be added to the marking.

2.20. Special Award Markings. Units having local competitions for best flying aircraft, best looking aircraft, etc., may apply a uniquely designed marking to the aircraft to denote winners. Criteria for application must be the same as in paragraph 2.19 of this instruction.

2.21. Competition Aircraft. Units participating in competitions such as William Tell, Gunsmoke, etc., must follow the guidelines established in the competition rules for aircraft appearance. **Note:** Excessive painting is detrimental to an effective corrosion program; therefore, complete overspray of selected competition aircraft is discouraged. Approach competitions with a "come as you are" management perspective. The wing and operations group commanders are responsible for ensuring the intent of this instruction is not violated. **Note:** AETC/CC will not approve waivers for special paint schemes or markings for these aircraft.

2.22. Helicopter Rotor Markings. All helicopter rotor markings are mandatory.

2.23. Aircraft Transfer. The following markings must be removed prior to formal transfer of aircraft to other units or MAJCOMs (aircraft retiring to AMARC need not have any markings removed).

2.23.1. Organizational insignias.

2.23.2. Unit identifier.

2.23.3. Tail stripe.

2.23.4. Aircrew and crew chief names.

2.23.5. Unit unique markings.

2.24. Requests. Wing commanders must submit all paint scheme/marketing requests according to policies established in this instruction on AETC Form 1236, through HQ AETC/A4MSS for final approval. (**Note:** Requests violating published technical data will not be accepted. Changes to technical orders must be processed according to TO 00-5-1-WA-1). Requests will be sent to aetc.a4mss@us.af.mil and must include the following:

2.24.1. A locally generated ESSS approved by wing commander or designated representative.

2.24.2. A clear statement of present procedure and the marking at issue.

2.24.3. A clear statement of proposed changes.

2.24.4. Justification.

2.24.5. Two high quality digital photographs; one of the aircraft with the present marking configuration and another of an aircraft with the requested change. Accomplish this by temporarily affixing the marking to the aircraft using double-back tape or by some similar method that does not require the marking to be applied permanently. Digital photographs can be e-mailed to aetc.a4mss@us.af.mil. The request must come from the unit's wing commander or deputy's e-mail address.

2.25. Aircraft Photo Requirements. Each assigned unit must submit a full-length photograph of their selected flagship aircraft to HQ AETC/A4MSS. Digital photographs are acceptable and can be e-mailed to aetc.a4mss@us.af.mil. When design changes to these paint schemes are submitted and subsequently approved, new photos must be submitted for file within 30 days after approval.

Chapter 3

COMMUNICATIONS, ELECTRONICS, AND METEOROLOGICAL (CEM) ACTIVITIES AND EQUIPMENT

3.1. General. This chapter provides CEM units with procedural guidance for establishing an effective corrosion prevention and control program (CPCP) for all CEM equipment.

3.2. Responsibilities.

3.2.1. Units. Units must establish a local CPCP that stresses prevention and control of corrosion through equipment cleanliness and timely detection and maintenance of protective finishes. Units may use the base CPCP applicable to the equipment being maintained when practical. If the base has a CPCP control board, the unit CPCP functional manager must request membership and attend those meetings that have communications and electronic equipment related topics.

3.2.2. Work Center Supervisors. Work center supervisors must ensure prevention or treatment actions are taken and documented on all equipment and systems under their control. Personnel assigned to the maintenance production work center are responsible for inspecting assigned vehicles (such as, trucks, vans, mobilizers, trenchers, tractors, back hoes, cable plows, and trailers) for corrosion. **Note:** The base civil engineer (BCE) must be contacted before any maintenance is performed on conduits used with communication and electronic equipment circuits classified as real property and real property installed equipment (RPIE).

3.2.3. Unit CPCP Functional Manager. The functional manager must:

3.2.3.1. Assist in procuring needed materials for prevention and treatment of corrosion within each work center. A locally fabricated corrosion control kit may be used. The unit CPCP functional manager and work center supervisors can jointly determine kit contents.

3.2.3.2. Ensure all maintenance personnel receive training on CPCP. The local environment must determine the level of training an individual must receive on assigned equipment.

3.2.3.3. Work closely with BCE for support of the unit CPCP. **Note:** Support coverage should consider RPIE, vehicles, shelter equipment (including van interior and exteriors, undercarriages and mobilizers, etc.) and equipment in storage waiting for projected installation.

3.2.3.4. Obtain corrosion control and treatment beyond the unit's capability from the BCE, vehicle maintenance shop, respective Air Logistics Center, or Air Force Materiel Command.

3.2.3.5. Ensure each work center adequately adheres to and participates in the unit CPCP. Periodically, but no less than annually, evaluate each work center's CPCP.

3.2.3.6. Ensure adequate quantities of referenced publications are available for the unit's needs.

3.3. Training Programs.

3.3.1. Training is required upon initial assignment to a unit. Initial subject knowledge training must cover the causes, removal, control, and prevention of corrosion. Annual refresher training is also required.

3.3.2. Follow-on training is conducted when new techniques are developed to identify, remove, or treat corrosion encountered by the unit. The unit CPCP functional manager, maintenance support personnel, and supervisors must be alert for applicable follow-on training subjects and cross feeds that may appear in other publications procurable through the unit publications personnel.

TONY POUNDS, Colonel, USAF
Deputy Director of Logistics, Installations, and
Mission Support

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

- AFPD 21-1, *Air and Space Maintenance*, 25 February 2003
- AFI 32-1024, *Standard Facility Requirements*, 14 July 2011
- AFI 48-145, *Occupational and Environmental Health Program*, 15 Sep 2011
- AFMAN 33-363, *Management of Records*, 1 March 2008
- TO/Supplement No, 1V-22 (C) B-2-DB-1, *Database Containing Org. Maintenance—CV-22 Technical Information System Database – Bell-Boeing*, 01 December 2004
- TO 00-5-1-WA-1, *AF Technical Order System*, 15 January 2003
- TO 1-1-8-WA-1, *Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment*, 12 June 2013
- TO 1-1-691-WA-1, *Aircraft Weapons Systems--Cleaning and Corrosion Control*, 14 March 2013
- TO 1C-17A-23-WA-1, *Org and Intermediate Manual -- System Peculiar Corrosion Control (Douglas ACFT)* , 1 May 2012
- TO 1C-130A-23-WA-1, *Technical Manuel -- System Peculiar Corrosion Control USAF Series C130A, C130B, C130E, C130H, HC130H, HC130N, HC130P, LC130H, AND MC130H acft*, 01 April 2013
- TO 1H-60(H)G-23-WA-1, *Organizational, Intermediate and Depot Corrosion Control HH-60 Series Helicopter*, 1 October 2012
- TO 1C-135-8, *Exterior Stencils USAF Series 135 aircraft*, 30 April 2008
- TO 1H-1-23-WA-1, *USAF Models TH-1H, UH-1H, and UH-1N Helicopters*, 15 June 2013
- 23 Series TOs
- TO 4W-1-61, *MAINT AND O/H INSTR – ALL TYPE ACFT WHEELS*, 12 July 2011
- UFC 4-211-02, *AIRCRAFT CORROSION CONTROL and PAINT FACILITIES*, 1 December 2012

Prescribed forms None

Adopted forms

- AETC Form 1236, *Request for Improving/Changing AETC Maintenance Publication*, 22 September 2006
- AFTO 95, *Significant Historical Data*, 11 April 2013
- AF Form 847, *Recommendation for Change of Publication*, 22 September 2009

Abbreviations and Acronyms

AETC—Air Educational and Training Command
AF—Air Force
AFI—Air Force Instruction
AFMAN—Air Force Manual
AFPD—Air Force Policy Directive
AFRIMS—Air Force Records Information Management System
AFSC—Air Force Specialty Code
AFTO—Air Force Technical Order
AGE—Aerospace Ground Equipment
AMARG—Aircraft Maintenance and Regeneration Group
BCE—Base Civil Engineer
CEM—Communications, Electronics, and Meteorological
CPCP—Corrosion Prevention and Control Program
CUT—Cross-Utilization Training
DTM—Direct-To-Metal
ESSS—Electronic Staff Summary Sheet
GITA—Ground Instructional Trainer Aircraft
FS—Fuselage Station
FTS—Flying Training Squadron
FTW—Flying Training Wing
IAW—In Accordance With
IMIS—Integrated Maintenance Information System
LCN—Logistics Control Numbers
LO—Low Observable
MAJCOM—Major Command
MDS—Mission Design Series
MIS—Maintenance Information System
MSDS—Material Data Safety Sheets
MTS—Maintenance Training Section
NLG—Nose Landing Gear
OG—Operations Group

OG/CC—Operations Group Commander

PDM—Programmed Depot Maintenance

PMA—Portable Maintenance Aid

RDS—Records Disposition Schedule

RPIE—Real Property Installed Equipment

SPM—System Program Manager

TO—Technical Order

UFC—Unified Facilities Criteria

US—United States

USAF—United States Air Force

USAFA—United States Air Force Academy

WA—1—Web access Technical Orders

Attachment 2

AIRCRAFT MARKING LOCATIONS

A2.1. C-17 Globemaster. Refer to TO 1C-17A-23-WA-1, *Org and Intermediate Manual – System Peculiar Corrosion Control (Douglas ACFT)*, for common aircraft markings.

A2.1.1. **Tail Flash (Stripe).** Apply to both sides of the vertical stabilizer; 2-inch top and bottom border with an 18-inch colored band in the middle. Proper placement is the top edge of the tail flash 12 inches below the letters AETC. It extends from the leading edge of the vertical stabilizer to the trailing edge of the upper rudder.

A2.1.2. **AETC Lettering.** Apply the letters AETC in 18-inch single-stroke; military block lettering to both sides of the vertical stabilizer. Proper placement on the vertical stabilizer is 12-inches below and centered on the front edge of the United States (US) flag.

A2.1.3. **Aircrew and Crew Chief Names (optional).** Proper placement is 6 inches below and centered on the command insignia; applied inside a 6- by 30-inch block to the left side of the forward fuselage.

A2.2. C-130 Hercules. Note: Special operations aircraft must conform to the most current lead command guidance and locally developed operating instruction regarding aircraft markings. Refer to TO 1C-130A-23-WA-1, *Tech MNL System Peculiar Corrosion Control USAF Series C130A, C130B, C130E, C130H, HC130H, HC130N, HC130P, LC130H and MC130H ACFT*, for common aircraft markings.

A2.2.1. **Tail Flash (Stripe).** Proper placement, starts at trailing edge of the vertical stabilizer leading edge, ends at leading edge of the rudder trim tab, (not onto the tab) 9-inch military block lettering, starting 1 inch from the rudder leading edge, stabilizer trailing edge, and centered from top to bottom; 2-inch top and bottom flat black border with a 12-inch color band in the center. (Special operations aircraft are not authorized tail flashes.)

A2.2.2. **Aircrew and Crew Chief Names (optional).** Apply in a box 12 inches high by 28 inches wide to the left forward area of the fuselage. Proper placement is the top of the box even with and 3 inches forward of the top of the crew entry door.

A2.2.3. **Landing Gear Wheels.** Wheels installed on all C-130 aircraft assigned to AETC will be painted white IAW T.O. 4W-1-61, pg. 1-6, Table 1-2. Aircraft being transferred will be reconfigured to conform to lead command guidance/instruction. **EXCEPTION:** AETC assigned C-130 aircraft at Kirtland AFB are authorized to utilize black wheels IAW AFSOC configuration (Fed Std 595, #37038).

A2.3. CV-22 Osprey. Note: Special operations aircraft must conform to the most current lead command guidance regarding aircraft markings and locally developed operating instruction. Refer to TO/Supplement No, 1V-22 (C) B-2-DB-1, *Database Containing Org. Maintenance—CV-22 Technical Information System Database – Bell-Boeing*, for common aircraft markings.

A2.4. KC-135 Stratotanker. Refer to TO 1KC-135-8, *Location and Application of Exterior Stencils*, for common aircraft markings.

A2.4.1. **Tail Flash (Stripe) and AETC Lettering.** Refer to TO 1C-135-8, Figure 7-7, Detail II for location of US Flag, MAJCOM, stripes and tail number.

A2.4.2. **Aircrew and Crew Chief Names (optional).** Apply inside a 6- by 30-inch box on the left side of the forward fuselage. Proper placement is the top edge of the box 6-inches below and centered on the command insignia.

A2.5. F-16 Fighting Falcon. Refer to lead command for common aircraft marking guidance.

A2.5.1. **Tail Flash (Stripe).** Apply to both sides of the vertical stabilizer; 6 inches high. Proper placement is the top of the tail flash even with the top of the rudder.

A2.5.2. **Bird of Prey Silhouette.** Apply to both sides of the forward fuselage backbone; 18 inches high. Proper placement is the beak and bottom feathers lined up with panels 2406 and 2409 just aft of 2401 and 2402 respectively and painted in the opposing gray to the area to which they are applied

A2.5.3. Aircrew and Crew Chief Names (optional).

A2.5.3.1. **A and C Models.** Center aircrew name on the left canopy rail with dedicated crew chief (DCC) name centered on the right canopy rail (font for aircrew and crew chief names will be at unit discretion, but letter height will not exceed 3 inches). No more than two assistant dedicated crew chief (ADCC) names may be applied to the inside surface of the nose landing gear door centered above the bottom edge (font shall be consistent with aircrew and DCC names, but letter height will not exceed 1.5 inches).

A2.5.3.2. **B and D Models.** Center first aircrew name on the left forward canopy rail, with additional aircrew name centered on the left aft canopy rail. Center the dedicated crew chief (DCC) name on the right forward canopy rail, with one ADCC name centered on the right aft canopy rail (font for aircrew and crew chief names will be at unit discretion, but letter height will not exceed 3 inches). One additional ADCC name may be applied to the inside surface of the nose landing gear door centered above the bottom edge (font shall be consistent with aircrew and DCC names, but letter height will not exceed 1.5 inches).

A2.6. F-35. Refer to lead command for common aircraft marking guidance.

A2.6.1. **Command Insignia.** Overall height is 12 inches (apply in light gray meeting color code #36375); bottom of the insignia will be centered 47 inches above the bottom edge the blackboard and centered fore to aft in the vertical stabilizer blackboard area.

A2.6.2. **Flagship Designator.** Overall height is 6 inches (apply in light gray meeting color code #36375); bottom of the insignia will be 14 inches above the bottom edge of blackboard area, centered between forward and aft blackboard area.

A2.6.3. **Unit Designator.** Overall height is 12 inches (apply in light gray meeting color code #36375); bottom of the designator will be centered 25 inches above the bottom edge of the vertical stabilizer blackboard.

A2.6.4. **Tail Stripe.** Not Authorized due to space limitations of the blackboard areas, sensitivity of flight control surfaces, and Joint Strike Fighter fleet standardization. **Note:** This requirement cannot be waived.

A2.6.5. **Pilot and Crew Chief Names (optional).** Overall height is 2 inches (apply in light gray meeting color code #36375). Pilot: end of name will be located 2 inches forward of inboard aft apex (BL 0) and 2 inches from BL 0 door edge (left NLG door); crew chief:

beginning of rank/name will be located 2 inches forward of inboard aft apex (BL 0) and 2 inches from BL 0 edge (right NLG door).

A2.6.6. Nose Number. Apply in light gray meeting color code #36375. Overall height will be 4 inches to be applied 4 inches from the edge of the NLG door blackboard boundary.

A2.6.7. Organizational Insignia. Overall height is 12 inches (apply in light gray meeting color code #36375); insignia will be centered within the blackboard area on the left and right side inlets below the chine and formation light.

A2.6.8. Tail Numbers. Overall height is 6 inches (apply in light gray meeting color code #36375). 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.

A2.7. H-1 Helicopter (UH-1N/UH-1H/TH-1H Huey/Iroquois). Paint the TH-1H aircraft gloss gray color code # 16118 with contrasting markings in gloss black color code #17038. **Note:** Special operations aircraft must conform to the most current lead command guidance and locally developed operating instruction regarding aircraft markings. Refer to TO 1H-1(U)N-3-1WA-1, USAF Models TH-1H, UH-1H and UH-1N Helicopters, for common aircraft markings.

A2.7.1. Aircraft Tail Numbers. Apply 6-inch single-stroke, military block lettering. Apply to both sides of the vertical tail-boom assembly. Proper placement is the bottom of the digits is 17 inches above the tail boom lower fin fairing line (item 8 fig 2-6 TO 1H-1(T)H-2-1), aligned parallel with the ground. In addition, the leading edge and trailing edge of the first and last digits must be centered between the trailing edge of the vertical fin and the leading edge of the tail rotor drive shaft.

A2.7.2. Aircrew and Crew Chief Names (optional). Place the aircrew and crew chief names inside a box 22 1/2 inches by 5 1/2 inches in size. Proper location is the pilot name centered horizontally and vertically on the right crew door with the crew chief name placed similarly on the left.

A2.7.3. Command Insignia. Apply to both sides of the vertical stabilizer; 10 inch subdued insignia. Proper placement is centered horizontally on stabilizer and bottom of insignia is 1 inch above aircraft unit designator marking. **EXCEPTION:** AETC assigned TH-1H aircraft are authorized to utilize 8 inch subdued insignia on left and right hinge panel doors centered and 4 inches below bottom edge of window.

A2.7.4. Nose Numbers. Apply 6-inch single-stroke, military block lettering. Proper placement is 6 inches aft from the leading edge of the nose access door (item 1 fig 2-5 TO 1H-1(T)H-2-1) and centered on door.

A2.7.5. Tail Flash (Stripe). Apply to both sides of the vertical tail-boom assembly; 9 inches high. Apply to upper portion of vertical stabilizer.

A2.7.6. Unit Designator. Apply to both sides of the vertical stabilizer; 10" height "military block" or computer equivalent font. Proper placement is 24 inches above the tail boom lower fin fairing line (item 8 Fig 2-6 TO 1H-1(T)H-2-1). The letters of the designator should be centered on the vertical fin; Aligned parallel with the ground.

A2.7.7. U. S. Air Force. Apply 6-inch single-stroke, military block lettering. Apply to both sides of the tail boom. Proper placement is the bottom of the letters is in-line with the aft

upper corner of the national star insignia and centered between the star and elevator, aligned parallel with the star.

A2.8. H-60 Helicopter (HH-60G Pave Hawk). **Note:** Special operations aircraft must conform to the most current lead command guidance and locally developed operating instruction regarding aircraft markings. Refer to TO 1H-60(H)G-23-WA-1, *Organizational, Intermediate and Depot Corrosion Control HH-60 Series Helicopter*, for common aircraft markings.

A2.9. T-1A Jayhawk:

A2.9.1. **Command Insignia.** Apply to both sides of the vertical stabilizer; 10 inch full color. Proper placement is centered on the stabilizer 4 1/2 inches below the bottom edge of the tail flash.

A2.9.2. **Unit Insignia.** Unit insignias are not authorized on T-1 aircraft.

A2.9.3. **Tail Flash (Stripe).** Apply to both sides of the vertical stabilizer; 6 inches high. Proper placement is the bottom edge of the tail flash even with the top of the rudder. The tail flash extends from the leading edge of the vertical stabilizer to the trailing edge of the rudder.

A2.9.4. **Unit Designator.** Apply to both sides of the vertical stabilizer; 15 inch single-stroke, military block lettering. Proper placement is the top of the letters 19 inches below the bottom edge of the tail flash, with the aft-most portion of the last letter 4 inches forward of the vertical stabilizer and rudder split line.

A2.9.5. **Aircrew and Crew Chief Names (optional).** Apply to the forward section of both sides of the fuselage. Proper placement of the pilot name is on the left side of the fuselage centered horizontally between water line 0 and the black stripe, parallel to the ground and centered vertically 2 inches forward of seam at Fuselage Station (FS) 108. The crew chief name is applied similarly on the right side.

A2.9.6. **Tail Numbers.** Apply to both sides of the vertical stabilizer; 8 inch single-stroke, military block lettering. Tail numbers will be blue; color code #858285.

A2.10. T-6 Texan II:

A2.10.1. **Command Insignia.** Apply full color command insignias to both sides of vertical stabilizer, centered between the top of the unit designator and the bottom of the Instrument Landing System antenna.

A2.10.2. **Unit Insignia.** Unit insignias are not authorized on T-6 aircraft.

A2.10.3. **Aircraft Tail Numbers.** Apply to both sides of the vertical stabilizer; 5 1/2-inch single-stroke, military block lettering. Proper placement is 38 1/2 inches below the top edge of vertical stabilizer fixed skin panel, 2.47 inch AF precedes the first digit; 2.47 inch last two of year of manufacture is placed 41 inches below the top edge of vertical stabilizer fixed skin panel and directly below the AF, aligned parallel with the ground. Apply in blue, color code #15044. Tail numbers may be applied in vinyl and applied between rivet rows. Note: Assigned aircraft must be uniform.

A2.10.4. **Tail Flash (Stripe).** Wrap around the upper portion of the vertical stabilizer antenna; 4 to 6 inches high. It extends from the leading edge of the vertical stabilizer to the trailing edge of the rudder. On aircraft with the vertical leading edge painted, the strip will extend from the leading edge to the trailing edge of the rudder.

A2.10.5. **Unit Designator.** Placement 1: Apply to both sides of the vertical stabilizer; 8 inch single-stroke, military block lettering. Proper placement is 26 inches below top edge of vertical stabilizer fixed skin panel. Align parallel with the ground. Apply the unit designator in blue, color #15044. Placement 2: Reduce size to 6 inch single-stroke and place between protruding head fasteners. **Note:** Assigned aircraft must be uniform.

A2.10.6. **Aircrew and Crew Chief Names (optional).** Apply aircrew names to the left side of forward fuselage, centered between hoist point and tip of canopy handle open arrow. Crew chief names go on right side of the forward fuselage and 6" aft of hoist point. Top of the letters must be located 6 inches above the top of the red line (original paint scheme) or blue line (new paint scheme) on the fuselage; color code #15044.

A2.10.7. **Aircraft Specific.** Use color code #17925 on all white surfaces. Paint vertical stabilizer leading edges white. Paint horizontal stabilizer leading edges blue color code #15044. Place a single danger ejection seats placard below the canopy rail in line on the center canopy bow on both sides of the aircraft. The ejection placard relocation must be accomplished during aircraft repaints.

A2.11. T-38 Talon:

A2.11.1. **Command Insignia.** Height is 10 inches, contrasting gray colors, applied to both sides of the vertical stabilizer. Proper placement is the top of the insignia 7 inches below the bottom edge of the tail flash with the center point of the insignia 16 3/8 inches forward of the stabilizer and rudder split line.

A2.11.2. **Unit Insignia.** Unit insignias are not authorized for T 38 aircraft.

A2.11.3. **Aircraft Tail Numbers.** Apply to both sides of the vertical stabilizer; 10 inch single-stroke and military block lettering. Proper placement is the top of the numbers 6-inches below and centered on the unit designator. Apply in contrasting gray color.

A2.11.4. **USAF.** Apply to both sides of the center fuselage; 6 inches, military block lettering and contrasting gray color. Proper placement is the forward edge of the first letter (for left side, last letter for right) 8 inches aft of FS 325 seam and parallel to the wing. The bottom edge of the letters should be 5 1/2 inches up from the wing 15 percent and 44 percent spars.

A2.11.5. **National Star Insignia (fuselage).** According to TO-1-1-8-WA-1, apply camouflage style cut-out, with no breaks in the lines and contrasting gray color. Apply to both sides of the aft fuselage. Proper placement is centered vertically on the "U.S. AIR FORCE" with the aft edge of the bar 1 inch forward of the hydraulic reservoir access door hinge.

A2.11.6. **National Star Insignia (wings).** According to TO 1-1-8-WA-1, apply camouflage style cut-out, with no breaks in the lines and contrasting gray color. Apply to the upper left wing and the lower right wing. Proper placement is the outboard and/or forward bar; edge points 9 inches from the leading edge and/or wing seam and 1 inch from the wing tip and/or wing seam. The outboard edge of the bar is parallel with the wing and only wing tip seam.

A2.11.7. **USAF (wings).** Apply to the upper right wing and lower left wing; 6-inch military block lettering and contrasting gray color. Proper placement is the same as the wing national star insignia.

A2.11.8. **Tail Flash (stripe).** Apply to both sides of the vertical stabilizer; 10 inches high. Proper placement is the top edge of the tail flash grounded against the vertical fin cap seam. It extends from the leading edge of the vertical stabilizer to the trailing edge.

A2.11.9. **Unit Designator.** Apply to both sides of the vertical stabilizer; 15-inch, single-stroke military block lettering. Proper placement is the top of the letters 23 inches below the bottom edge of the tail flash, centered under the command insignia. Apply all tail markings (unit designator, serial number, etc.) in contrasting gray color.

A2.11.10. **Aircrew and Crew Chief Names (optional).** Center on the forward cockpit canopy rails. Apply the pilot name to the left forward canopy rail and the crew chief name to the right forward canopy rail.

A2.11.11. **Other Aircraft Markings.** Battery, grounding, no step, rescue, ejection, data legend, engine fire doors, servicing and other required markings (those currently mandatory on the current T-38A paint scheme) must be applied in opposite shades of gray, color code numbers #16473 or 16081, for example, if the marking is in the dark gray areas of the fuselage or empennage, they must be in color code #16473. Those in the light gray areas must be gray, color code # 16081. The pitot tube must be painted dark gray color code #16081. On IFF aircraft painted in specialized undergraduate upgrade training colors, paint the V-tip color code #16473.

A2.12. T-41:

A2.12.1. **National Star.** Apply to both sides of fuselage and on top left wing and bottom right wing.

A2.12.2. **USAF.** Centered on both sides of engine cowl on top right wing and lower left wing.

A2.12.3. **United States Air Force Academy (USAF) Emblem.** Centered on both sides of the vertical stabilizer.

A2.12.4. **Tail Numbers.** Apply to both sides of the rear fuselage forward of the vertical stab.

A2.12.5. **Crew Names (optional).** Apply to both crew entry doors below window.

A2.13. T-51:

A2.13.1. **National Star.** Apply to both sides of fuselage and on top left wing and bottom right wing.

A2.13.2. **USAF.** Center on both sides of engine cowl on top right wing and lower left wing.

A2.13.3. **USAF Emblem.** Center on both sides of the vertical stabilizer.

A2.13.4. **Tail Numbers.** Apply to both sides of the rear fuselage forward of the vertical stab.

A2.13.5. **Crew Names (optional).** Apply to both crew entry doors below window.

A2.14. T-53:

A2.14.1. **Aircrew and Crew Chief Names (optional).** Apply to both crew entry doors below window.

A2.14.2. **National Star.** Apply to both sides of fuselage and on top left wing and bottom right wing.

A2.14.3. **USAF.** Apply on top right wing and lower left wing.

A2.14.4. **US Air Force.** Apply to both sides of fuselage. Proper placement is centered vertically within horizontal blue strip and 4.25" in height.

A2.14.5. **Tail Numbers.** Apply to both sides of vertical stabilizer; 5.5 inches in height. Proper placement is 2.5" above red fuselage strip and last digit straight in-line with vertical aft edge of "F" designator.

A2.14.6. **Unit Designator.** Apply to both sides of vertical stabilizer; 12.6 inches in height. Proper placement is 6" above tail number and vertical aft edge of "F" in-line with trailing edge of tail number.

A2.14.7. **AF Symbol (flagship only).** Apply to both sides of vertical stabilizer; wings will be 4.375 inches in height. Proper placement is bottom of wings 5.5" above top of unit designator and centered on vertical aft edge of "F".

A2.14.8. **Tail Flash (stripe).** Apply to both sides of vertical stabilizer; 5.25 inches in height. Proper placement is top edge of tail flash 8" below top of rudder and level with fuselage stripe.

A2.15. TG-10B/C:

A2.15.1. **Tail Numbers.** Apply to both sides of the vertical stabilizer.

A2.15.2. **Crew Names (optional).** Apply to left side of fuselage below canopy.

A2.16. TG-15A/B:

A2.16.1. **Tail Numbers.** Apply to both sides of the vertical stabilizer.

A2.16.2. **Crew Names.** Apply to both sides of fuselage below canopy.

A2.17. TG-16A:

A2.17.1. **Aircrew and Crew Chief Names (optional).** Apply to both sides of fuselage below canopy.

A2.17.2. **Tail Numbers.** Apply to both sides of the vertical stabilizer.

A2.17.3. **Command Insignia.** Apply to both sides of the vertical stabilizer.

A2.17.4. **National Star.** Apply to top of left wing and lower right wing.

A2.17.5. **Tail Flash (stripe).** Apply to both sides of vertical stabilizer.

A2.17.6. **Unit Designator.** Apply to both sides of vertical stabilizer.

A2.17.7. **USAF.** Apply to top right wing and lower left wing.

A2.17.8. **U. S. AIR FORCE.** Apply to both sides of forward fuselage.

A2.18. UV-18:

A2.18.1. **National Star.** Apply to both sides of fuselage and on top left wing and bottom right wing.

A2.18.2. **USAF.** Apply to center of top right wing and lower left wing.

A2.18.3. **U. S. AIR FORCE.** Apply to both sides of forward fuselage.

A2.18.4. **Tail Numbers.** Apply to both sides of the vertical stabilizer.

A2.18.5. **Tail Flash.** Apply to top, both sides of vertical stabilizer.

A2.18.6. **Crew Names (optional).** Apply to both crew doors below window. Apply jumpmaster name to left storage door.