

**T.O. 1-1-4**

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**TECHNICAL MANUAL**

**EXTERIOR FINISHES, INSIGNIA AND  
MARKINGS,  
APPLICABLE TO USAF AIRCRAFT**

F09603-89-3074

(ATOS)

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## SECTION I

### GENERAL

1-1. **PURPOSE.** The purpose of this technical order is to standardize the painting and marking configuration of exterior surfaces of all Air Force aircraft. In the event of conflict between a specific system/equipment Technical Order (TO) and a general TO, the system/equipment TO will take precedence. Conflicting instructions between any two TOs that compromise personnel safety or procedural guidance will be resolved by local commanders and reported for formal resolution by responsible authority. Also prescribed are the limited internal markings that are common among the Air Force aircraft (see applicable weapons system's handbook for peculiar markings). Only the types and colors of paints, coatings, finishes, insignia and markings specified herein will be used on USAF aircraft. (See AFR 66-34/AFI 21-105 and paragraph 1-6 this TO on procedures to propose changes to either the standard paint schemes or markings.)

#### NOTE

For operational purposes of this document. System Program Director (SPD) in this TO includes all players of the Integrated Weapon System Management concept of "cradle to grave" system maintenance.

Program Group Manager (PGM)  
Material Group Manager (MGM)  
System Program Officer (SPO)  
System Program Manager (SPM)  
System Support Manager (SSM)  
Program Director (PD)  
System Manager (SM)  
Item Manager (IM).

1-2. **DEFINITIONS.** The following are definitions of terms used when dealing with the painting and marking of USAF aircraft.

a. **Air Force Standard Exterior Finish.** This term applies to the type and color of the final top coating authorized and required by this technical order for application to the exterior surfaces of noncamouflaged USAF aircraft. This term does not include any of the markings or insignia usually applied over the final top coating or finish. (See Section II.)

b. **Air Force Standard Camouflage Finish.** Refers to the vari-colored and/or irregular shaped exterior pattern approved for the camouflage painting of designated aircraft. The colors and

patterns used are generally determined by the geographical region of the world in which aircraft are to operate and/or the operational role of the aircraft. This term does not include any of the markings or insignia usually applied over the final top coating or finish. (See Section V.)

c. **Special Purpose Exterior Finish.** Refers to final coatings and approved paints or lacquers applied to specific portions of aircraft exteriors to provide for special needs. (See Section II.)

d. **USAF Standard Markings.** These markings that are mandatory for display on all USAF aircraft. (see paragraph 1-11, Section III, and Section VI.)

e. **Special Purpose Markings.** Exterior markings for aircraft other than the USAF standard markings, that are required for application, or may be authorized under certain circumstances, as stated in this technical order. Special purpose markings are varied in type and usage. They include various insignia, emblems, and symbols, whose need may vary with the differences in weapon system configuration and other pertinent circumstances. (See Section IV.)

f. **Aircraft Unit Identification Markings.** Alphabetic letter, numerical digits, or combinations of both, that may be displayed on both sides of vertical fins of designated combat and combat support aircraft primarily to allow ready air-to-air recognition. The use of these markings is rigidly controlled and their indiscriminate or arbitrary use is prohibited. (See Section III and IV.)

g. **Tubing, Hose and Pipe Markings.** Those colors, symbols and legends installed on aircraft tubing, hoses, pipe and rigid electrical conduit to identify the function, content, hazard or direction of flow. (See Section VII and Appendix F.)

1-3. **APPLICABILITY.** This technical order is applicable to all USAF Air National Guard and Air Force Reserve Aircraft. (See paragraph 4-8.)

#### 1-4. RESPONSIBILITIES.

a. **Scope.** WR-ALC/LKJTC is responsible for the contents of this technical order, its currency and its application within the scope of pertinent Air Force Regulations, Specifications and Standards. Unless specified elsewhere herein, all matters relating to the painting and marking of aircraft will be directed to WR-ALC/LKJTC.

## TO 1-1-4

b. Compliance. AFMC System Program Directors (SPDs) shall be responsible for assuring compliance to the requirements of AFR 66-34 or AFI 21-105. General Air Force policies promulgated by HQ USAF/LGM under authority of AFR 66-34 or AFI 21-105 with respect to the management and control of painting, paint schemes, and markings which are included in this technical order.

c. Maintenance and Application. Major commands and using organizations are responsible for maintenance of coatings, finishes, insignia, and markings required by this technical order for all assigned aircraft, and for complete overcoating or strip and repaint of assigned aircraft listed in Table 1-3 of T.O. 00-25-4. When work required to comply with this technical order is beyond the capability of the using organization, and upon certification of the major command in accordance with T.O. 00-25-107, AFMC may assume responsibility for such requirement if depot resources are available. AFMC shall, in accordance with the criteria of this technical order, be responsible for complete overcoating or strip and repaint of aircraft listed in Tables 1-1 and 1-2 of T.O. 00-25-4.

#### 1-5. MAJOR COMMAND REGULATIONS.

Major commands shall prepare regulations pertaining to the painting and marking of their respective aircraft except as follows:

a. Limitations. These regulations will supplement this technical order and will be limited to distinguishing insignia, markings, and finishes peculiar to their assigned aircraft and as authorized by this technical order.

b. Coordination. Each major command shall coordinate its proposed painting and marking regulation with WR-ALC/LKJTC prior to publication, distribution or implementation. These regulations will be carefully reviewed by AFMC to insure that they contain no deviations from the instructions and intent of this technical order.

#### NOTE

Each major command shall forward published copies of approved painting and marking regulations to WR-ALC/LKJTC, and the applicable prime aircraft SPD listed in TO 00-25-115.

1-6. AUTHORIZED DEVIATIONS. Special missions and/or aircraft assignments require deviation from the standard exterior paint and marking configuration. In all cases, WR-ALC will maintain copies of drawings and color photographs (when available) of paint and marking schemes of special mission aircraft.

#### NOTE

In the event of required painting or marking changes, the using command is responsible to forward the appropriate drawings and photographs to WR-ALC/LKJTC and the responsible aircraft SPD.

a. 89th Airlift Wing, 201 AS, and the 1st Helicopter Squadron. Deviations from the standard exterior paint and marking configurations specified herein, are authorized for aircraft assigned to the 89th Airlift Wing (Special Mission-AMC, 201 AS), and the 1st Helicopter Sqd. Painting and marking of these aircraft will be as specified and approved by Headquarters USAF/LGMY.

b. Energy Research and Development Agency (ERDA). AFMC and AMC aircraft assigned in direct support of the ERDA in nuclear research will be painted as required for the safe accomplishment of that mission. AFMC, AMC, and (WR-ALC/LKJTC) will coordinate on the type of paint and paint scheme required. This provision is applicable only to those aircraft that actively engage in required ERDA tests and not to administrative support aircraft.

c. U.S. Air Force Aerial Demonstration Squadron "The Thunderbirds." Special paint scheme and markings are authorized for aircraft assigned to the Air Force Aerobatics Team and will be approved by Headquarters USAF/LGMY.

d. 58th Airlift Squadron. Aircraft assigned to the 58th Airlift Squadron are authorized aircraft radio call numbers on each side of vertical stabilizers, the American flag and United States of America markings, with no other external USAF markings identified/authorized (ie., USAF, stars and bars on wings or fuselage, identity of aircraft or fuel under pilot's window, organizational markings). Deviations from standard exterior paint and marking configurations specified herein, are authorized for aircraft assigned to the 58th Airlift Squadron. Painting and marking of these aircraft will be as specified and approved by Headquarters USAF/LGMY.

e. USAFE - C-9A Aircraft. C-9A aircraft assigned to USAFE, are authorized aircraft radio call numbers on each side of vertical stabilizer, Red Cross on vertical stabilizer, American flag and United States of America markings.

1-7. AIRCRAFT RECEIVED FROM OTHER SERVICES. When types and models of aircraft not previously in the USAF inventory, are acquired from other military departments, the respective System Program Director (SPD) shall request from WR-ALC/LKJTC, drawings for the

USAF Standard Markings for the new vehicles. The SPD will ensure the proper exterior painting and marking configuration of these aircraft is in accordance with the approved drawings.

a. The SPD is responsible for the preparation of proposed Special Purpose Markings for servicing, personnel instructions, caution, safety, etc. as specified in Section IV, this technical order. The SPD will forward to WR-ALC/LKJTC for approval, two sets of exterior drawings illustrating the location of the utility markings on these aircraft by structural member station number and water line (W/L) reference points specifying dimensions and colors to be used.

1-8. REQUEST FOR WAIVERS. Requests for waivers to provisions of this technical order will be limited to those proposed changes based on functional, operational or special requirements and will contain full written justification, and, where applicable, definitive drawings. Requests for waivers based solely upon appearance will not be approved.

#### NOTE

Requests for approval of waivers to provisions of this technical order shall be carefully reviewed at each respective command level and if approved, will be forwarded to WR-ALC/LKJTC, with information copy to the SPD. Where necessary LKJTC will coordinate with the SPD.

1-9. SERVICE TESTS. Requests for authority to test paint type materials on in-service aircraft and/or external components will be forwarded to WR-ALC/LKJTC for approval. Approved service test programs will be implemented by a coordinated effort, monitored by the appropriate engineering function, the requesting activity and the pertinent SPD.

1-10. REPORTING PAINTING AND MARKING DEFICIENCIES. Inadequacies of instructions or deficiencies of specified materials contained in this technical order, or other recommended changes, will be reported to WR-ALC/TILTA on AFTO Form 22, Technical Order System Publication/Improvement Report, in accordance with TO 00-5-1.

1-11. DECALCOMANIA (DECALS). Decals may be used in lieu of paint for all external and internal markings and insignia required by this manual where the contact surfaces are of sufficient smoothness to permit good adhesion. See TO 1-1-8 for instructions for installation and removal of decals.

#### NOTE

For the purpose of this technical order, decals are defined as a specially prepared film containing design, words or numerals of polyester film, MIL-P-38477, which may be transferred and permanently attached to aircraft or other Air Force equipment.

a. Requisitioning Procedure for Decals. Decal markings required for Air Force equipment are listed in technical manuals under Illustrated Parts Breakdowns, and will be requisitioned on Air Force Form 764A in accordance with AFR 6-1/AFI 37-162 from the appropriate ALC or Air Force Depot indicated in TO 00-25-115.

b. Standard Decals. Decals for the following will be manufactured, stored and issued by SMALC, PDO:

(1) National Star Insignia. (See Appendix A)

(2) USAF Marking. (See Appendix A)

(3) U.S. AIR FORCE Marking. (See Appendix A)

(4) Aircraft Serial Numbers. (See Appendix A)

(5) Radio Call Numbers. (See Appendix B)

(6) American Flag Markings. (See Appendix C)

(7) ARMAMENT placards. (See Appendix E)

(8) Standardized Grounding Marking. (See Appendix E)

c. Non-standard Decals. Decals for non-standard Air Force markings such as command or squadron insignia may be locally purchased in accordance with AFR 6-1/AFI 37-162.

1-12. APPLICABLE REFERENCES. Additional instructions and directives applicable or allied to the application and maintenance of finishes and markings of aircraft are contained in the following:

a. TO 00-25-107, AFLC Maintenance Technical Assistance to Air Force Field Activities.

b. TO 00-25-115, AFLC Maintenance Engineering Prime ALC and AF Depot.

c. TO 00-110A-1, Decontamination (TMs220).

d. TO 00-110N-3, Radioactive Decals, Removal from aircraft parts and equipment.

## TO 1-1-4

- e. TO 1-1-691, Aircraft Weapons Systems Cleaning and Corrosion Control.
- f. TO 1-1-8, Application of Organic Coatings (Paint and Allied Materials).
- g. TO 42A-1-1, Safety, Fire Protection and Health Promotion Aspects of Painting, Doping, and Paint Removal.
- h. AFI 21-105, Aerospace Equipment Structural Maintenance.
- i. AFI 37-162, Printing, Duplicating and Copying Management.
- j. AFR 900-3, Use and Display of Airforce Flags, Guidons, Streamers, and Automobile and Aircraft Plates.
- k. AFR 6-1/AFI 37-162, Decalcomanias and Other Markings.
- l. AFR 66-34/AFI 21-105, Painting and Marking Aircraft, Missile, and Drone
- m. AFR 82-1, Designating, Redesignating and Naming of Military Aircraft, Rockets, and Guided Missiles.
- n. AFR 400-44/AFI 21-105, Corrosion Prevention and Control Program.
- o. Military Standard MIL-STD-1247, Identification of Pipe, Hose and Tube Lines for Aircraft, Missile and Space Systems.
- p. Military Standard MS33739 (ASG) Aircraft Servicing and Precautionary Markings.
- q. Military Specification MIL-F-7179, Finishes and Coatings, General Specification for Protection of Aerospace Weapons Systems, Structures and Parts.
- r. Air Standardization Coordinating Committee Air Standard II/ID for Servicing and Ground Handling Codes.
- s. CENTO STANAG #3230 - Emergency Marking on Aircraft.
- t. NATO STANAG #3109 - Servicing and Ground Handling Codes.
- u. NATO STANAG #3230 - Emergency Marking on Aircraft.

## SECTION II

### STANDARD EXTERIOR FINISHES FOR USAF AIRCRAFT

2-1. **METAL EXTERIOR FINISHES.** Metal exterior surfaces of all (see policy guidelines in paragraph 2-2 below) Air Force aircraft other than those made of titanium and corrosion resistant steels, require surface protection from the effects of corrosion and therefore will be painted in accordance with the provisions of this technical order.

a. **Titanium or Steel.** Since titanium or corrosion-resistant steels, when used, make up only a part of the total aircraft exterior surface, they will also be painted with the same finishes as the adjacent metals, providing temperatures permit.

#### NOTE

Do not paint any equipment where the application of paint will deter its operational capabilities (antenna, radomes, etc.)

b. **Treatment of Metal Exteriors.** The treatment of metal exteriors for corrosion control are specified in TO 1-1-691. The proper preparation of surfaces for painting, priming and application of finish coatings are specified in TO 1-1-8. In addition to protective finishes, regular scheduled surface washing and cleaning in accordance with TO 1-1-691 will minimize the probability of corrosion. Some surfaces will require additional surface protection and will be specified further in this section.

2-2. **POLICY GUIDANCE.** It is a general policy (AFR 66-34/AFI 21-105) that all Air Force aircraft will be painted as a prime means of corrosion protection and prevention. Inherent in this policy is the responsibility to preserve a professional paint appearance as an integral part of a well-managed corrosion control program (AFR 400-44/AFI 21-105). The requirement to paint, however, must be tempered with good judgement and in consideration of funds availability. It is not intended that crash programs be established for the prompt painting of aircraft. Aircraft will be painted in accordance with a service life plan unless there is an over-riding operational requirement as determined by HQ USAF/XOO. Aircraft should be scheduled for painting with due regard for other scheduled maintenance and funding. Aircraft are not to be painted unless they are programmed for retention in the active inventory for at least two years after painting. Aircraft will receive maintenance painting to

preserve coating integrity. The following criteria will apply in programming aircraft for painting.

a. Aircraft determined to have a sound paint system already applied will not be repainted solely to incorporate color, improve appearance or material changes to the standard paint system and color scheme as listed herein. When it is necessary to perform maintenance on such aircraft with former standard or non-standard paint (unless deteriorated to the extent that complete replacement is required), use like or same type material as originally applied for maintenance painting purposes. For new aircraft entering the inventory or for aircraft requiring repainting the cognizant engineering authority within AFMC in conjunction with the major operating commands will evaluate all available technical, engineering and historical evidence to determine the appropriate corrosion protection and prevention system (type coating, color schemes, service life criteria, etc) for each weapon system. A coordinated paint/ repaint plan will be developed and kept current for each weapon system. This plan may be based on a weighted Paint Program inspection and evaluation procedure, calendar time/severity zone criteria, or other approved technique. All aircraft under Tables 1-1 and 1-2 of T.O. 00-25-4 will be inspected prior to (if possible) and/or during PDM for condition of the paint. The purpose of the inspection will be to determine if the aircraft should be repainted or touched-up.

(1) In determining requirements for sectional overcoating, total overcoating, or strip and repaint, the following general technical criteria should be considered in the development of the approved weapon system paint plan.

(a) Sectional or total overcoat if paint is oxidized, discolored, stained, chipped, scratched or peeled from primer and the primer is adhering soundly to the aircraft. If this condition is extensive, complete overcoating of the aircraft or section is preferred over spot maintenance painting.

(b) Strip/repaint if the following defects or combination of them exist: areas which have been overcoated (primer plus topcoat) at least three times, primer is not adhering to base metal, or the paint system is peeled to base metal.



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(2) When applying the above criteria to determine painting requirements and a combination of defects for overcoating and strip and repaint exists, the following general economic guidelines should be considered in the development of the approved weapon system paint plan.

(a) When determining sectional or total aircraft overcoating and a combination of defects exist, overcoating may be accomplished if time or manhour requirements for surface preparation (mask, sand, and clean) do not exceed 70% of the time or manhours required for complete strip/repaint.

(b) Sectional stripping may be required, as determined by deteriorated areas, on an aircraft designated to be completely overcoated. Complete overcoating with prior sectional stripping may be accomplished if the combined time or manhours for sectional stripping and surface preparation for overcoat do not exceed 70% of the time required for complete strip/repaint.

(c) Complete strip/repaint should be accomplished in lieu overcoating whenever time or manhour requirements for masking, sanding, and cleaning for total or sectional overcoating exceed 70% of those to accomplish strip/re-paint.

(3) In the absence of an approved tailored weapon system paint plan the above criteria will apply to all aircraft.

## NOTE

For purposes of planning facility requirements, the expected paint system average life before the need for strip/repaint is:

High gloss - 8 years  
Flat (unsheltered) - 6 years  
Flat (sheltered) - 8 years

- This assumes good maintenance of coating system and complete overcoat at approximately the mid-life point.
- For the purpose of mission change or other reassignment of aircraft with sound coating systems for which the existing coating or markings are inappropriate, the major command shall

overspray the existing paint system in accordance with T.O. 1-1-8.

b. Maintenance Painting. Maintenance painting procedures will not be used if there is any indication of a major failure of the aircraft paint system. Operational environment and life expectancy of the paint system will be considered in making this determination. If major failure of the paint system is evident, complete repaint should be scheduled promptly.

## NOTE

Table I and II (T.O. 00-25-4) aircraft painting should be programmed for accomplishment during a scheduled entry into a depot level facility for PDM, other modification/maintenance requirements, or whenever corrosion is evident, whichever occurs first. The evidence of corrosion in any case shall mean the point at which corrosion would cease to be controlled in accordance with criteria of technical orders 1-1-691, and/or the system peculiar (-23, etc.) technical orders. Table III (T.O. 00-25-4) aircraft will be painted by using organizations in accordance with technical orders 1-1-8, and 42A-1-1.

(1) Sectionalized painting of aircraft. To minimize the contrast between new coatings and aged or bleached topcoat finishes, individual aircraft may have sectionalized painting for maintenance purposes. The sections are defined as major sections of the aircraft such as wings, nacelles, stabilizers, rudders, empennage or other portions as from one major assembly joint to another. This may also be applied to single panels of metal between skin joints, doors, control surfaces and access panels as applicable. The criteria for aircraft in paragraph 2-2a. will be used to determine requirements for sectionalized painting. Sectionalized painting will be accomplished in lieu of spot maintenance painting when the criteria of paragraph 2-2a. is met. The paint material used must be of the same type as the adjacent serviceable areas. Smaller portions of deteriorated paint (less than that which qualifies for sectionalized painting), must be touched up with the conventional spot or strip pattern.

## NOTE

- Under no circumstances will total section/panel areas, which meet the foregoing sectionalizing criteria, be considered as cumulative requirements for total aircraft repaint. Total repaint criteria will apply based upon the total aircraft assessment before the sectionalized concept is applied.
- In order to realize the maximum benefits of corrosion protection afforded by painting, it is necessary to achieve proper adhesion of the paint to the metal surfaces or existing coatings on which applied. In this regard, it is MANDATORY that all steps of surface preparation and application of coating systems, as specified in T.O. 1-1-8, be strictly followed.

2-3. AIR FORCE STANDARD EXTERIOR FINISHES. (See Appendix B.) Aliphatic Polyurethane coating specification MIL-C-83286, and MIL-C-85285 (Hi-SOLID) coating are the standard Air Force exterior finish coating for all aircraft. These coatings will be specified or used in lieu of specification MIL-L-19537, MIL-L-19538, MIL-C-81352 and any other specifications for painting or refinishing of all aircraft. The following criteria will apply in converting to the Aliphatic Polyurethane coating.

## NOTE

- The F-111A/D/E/F, FB-111A and EF-111A are exempt from the Air Force standard exterior finish. The standard exterior finish for the above aircraft will be epoxy primer, MIL-P-23377, and topcoat, acrylic lacquer, MIL-L-81352.
- All U.S. Air Force Museum managed aircraft and aerospace equipment assets (EXHIBITS) are exempt from the Air Force standard exterior finishes. The standard exterior finish for museum exhibits/static displays shall be whatever is environmentally friendly and approved for use by the installation bioenvironmental engineers. Appropriate primers compatible with the finish coat will be used. Color, markings and insignia (CMI) will be approved by the U.S. Air Force Museum.

a. Authorized conversions shall be limited to aircraft or aerospace equipment normally scheduled for complete repainting only.

b. The polyurethane paint will not be specified or used to touch up other types of paint such as acrylic nitrocellulose specification MIL-L-19537, MIL-L-19538, etc.

c. Conversion will be limited to aircraft that actually needs painting or complete repainting due to deterioration of existing paint finish. Painting for the sole purpose of converting to the polyurethane coating is not approved. (See paragraph 2-2.)

2-4. EXTERIOR FINISH IDENTIFICATION CODES. Instructions for the application of required code markings depicting the coating system applied to overall aircraft exteriors is contained in Appendix A, this technical order.

2-5. SPECIAL PURPOSE EXTERIOR SOLAR RESISTANT FINISHES. For the purpose of this technical order, solar resistant finish is defined as a white cap painted on the top surface to reduce the aircraft interior temperature. The solar resistant finish is authorized only for those aircraft used primarily as personnel carriers or that routinely carry heat sensitive equipment as part of their mission. In either case or for special purpose aircraft, authorization must be provided by the major command and be reflected in the major command regulation.

a. Configuration. Normally, the solar resistant finish on the top surface of the fuselage shall be separated from the lower adjacent finish by a three inch blue stripe. For small aircraft equal to and smaller than T-39 aircraft, use a one and one-half inch blue separation stripe, color No. 15044. The upper edge of the stripe shall extend parallel to the fuselage reference line from a point approximately tangent to the lowermost edge of the pilot's compartment windows aft to infinity. Aircraft painted with solar resistant finish shall have the vertical tail painted white also. It is permitted to break the continuity of the straight line in the extreme aft section for appearance purposes.

b. Color Specification. The authorized solar resistant paint system is MIL-C-83286/MIL-C-85285 color, white, No. 17925 for the top of the fuselage and color, blue, No. 15044 for the separation stripe, or if the specific aircraft is authorized for a system other than the Aliphatic Polyurethane system then the solar resistant finishes shall be compatible with that applied.

## NOTE

Unless otherwise specifically authorized in this technical order, no marking or lettering will be applied on the white solar resistant finish on the aircraft fuselage.

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2-6. EXHAUST, GUN AND ROCKET GAS/BLAST AREAS. Polyurethane coating system, MIL-C-83286/MIL-C-85285 will be used for the protection of surface areas exposed to engine exhaust, gun and rocket gas/blast areas.

a. Exhaust Track Areas. Exhaust track areas will normally be painted black, color No. 17038. However, Grey, color No. 16473 or White, color No. 17925, may be used when replacing the paint in the affected area and where necessary to retain the original aircraft color scheme.

b. Gun and Rocket Blast Areas. Gun and rocket blast areas will not require a special color designation other than that of the color of the adjacent aircraft exterior finish. Specific areas requiring such coatings will be as prescribed by the respective System Program Director (SPD).

2-7. THERMAL REFLECTIVE FINISH. All USAF aircraft programmed to participate in thermonuclear tests normally shall be protected with a thermal reflective finish system to include a top coating of polyurethane Specification MIL-C-83286/MIL-C-85285, White, color No. 17925. The required paint scheme will be specified by type and model aircraft by WR-ALC. Application instructions are included in TO 1-1-8. Authorization for applying thermal reflecting finishes will be obtained from WR-ALC/LKJTC.

2-8. SALT WATER, SALT AIR AND POLLUTED AIR. Adequate corrosion resistance from salt water spray, salt heavy atmosphere and various air pollutants is provided by the standard exterior finish. Aliphatic Polyurethane, MIL-C-83286/MIL-C-85285.

2-9. ANTI-GLARE FINISHES. Aircraft surfaces (such as nose section and cowling) which reflect an objectionable glare to the pilot and crew shall be finished with Aliphatic Polyurethane lusterless, MIL-C-83286/MIL-C-85285, color No. 37038, as applicable.

2-10. ACID RESISTANT FINISHES. MIL-C-83286/MIL-C-85285 or TT-L-54 shall be applied to

areas susceptible to acid, alkali and urine corrosion such as battery compartments, buffet, lavatory and relief tube discharge areas. The area to receive the coating shall be cleaned in accordance with TO 1-1-691 and the coating applied in accordance with TO 1-1-8.

2-11. FINISHES FOR AIRCRAFT PROPELLERS AND HELICOPTER ROTORS. Refer to applicable aircraft, propeller or rotor technical order for approved blade finishes and blade data markings. (See Section IV, this technical order for approved propeller and rotor safety markings.)

2-12. ANTI-SKID COATING FOR WALKWAYS. When approved by the appropriate SPD, walkway coating conforming to MIL-W-5044 may be applied in colors to contrast or match the adjacent coating, in accordance with TO 1-1-8, on the wing roots of subsonic fixed wing aircraft on which the wing roots are used as a walk-on area. The coating may also be applied on other areas that receive heavy duty traffic or are hazardous to pilot and service personnel. Generally, the wing-root walkway coating will be applied on both wing roots to a width of 18 inches measured from the fuselage, and shall extend from just aft of the leading edge to just forward of the trailing edge.

2-13. FINISH SYSTEM FOR ENGINE AIR INTAKE DUCTS/SCOOPS. Unless otherwise specified in applicable aircraft technical orders, the finish system for all engine air intake ducts/ scoops shall be the same as for the exterior of the aircraft, white, color No. 17925. The forward opening of the ducts/scoops shall be coated to blend with the exterior color of the aircraft, i.e. grey for grey aircraft, blue for blue aircraft, camouflage for camouflaged aircraft etc., to a depth sufficient to insure that the white cannot be seen from the immediate exterior. The paint system in the ducts/scoops should be inspected and touched up or repainted on the same basis as the exterior system.



## SECTION III

## STANDARD MARKINGS AND INSIGNIA FOR USAF AIRCRAFT

3-1. GENERAL. The markings and insignia contained in this Section will be applied to all Air Force aircraft as specified herein. Section V contains special instructions concerning markings and insignia for camouflaged aircraft. Appendix A reflects specific instructions, dimensions, etc., for the proper application of these markings and insignia. (See paragraph 4-20 for procedure to establish new requirements for markings and insignia if not included in this technical order.)

3-2. USAF STANDARD MARKINGS AND INSIGNIA. The following are the USAF standard markings and insignia for Air Force aircraft.

<u>ITEM</u>	<u>GENERAL LOCATION</u>
National Star Insignia	Wing and Fuselage
"USAF" Marking	Aircraft Wings
"U.S. AIR FORCE" Marking	Aircraft Fuselage
Serial Number	Aircraft Fuselage
Aircraft Data Legend	Aircraft Fuselage
Aircraft Radio Call Number	Aircraft Vertical Fin

## NOTE

The above USAF Standard Insignia and Markings will not be altered in location, dimension or configuration from the specifications reflected herein to accommodate any other insignia or marking.

a. National Star Insignia. The National Star Insignia will be installed on all USAF aircraft. The insignia shall consist of an insignia-white five-pointed star located within an insignia-blue circumscribed circle. An insignia-white rectangle shall be located on each side of the star. The top edge of the rectangle shall form a straight line with the upper edges of the horizontally opposed star points. An insignia-red horizontal stripe shall be centered in each end of the rectangle. An insignia-blue border shall outline the entire insignia. The insignia-blue border and insignia-blue circle may be omitted when the National Star Insignia is applied on blue

or black finishes. Specific instructions for installing the National Star Insignia and appropriate dimensions are contained in Appendix A.

(1) National Star Insignia on Aircraft Fuselage. The National Star Insignia will normally be applied to each side of the aircraft fuselage, midway between the wing trailing edge and the leading edge of the stabilizer.

(2) National Star Insignia on Aircraft Wings. The National Star Insignia shall be applied on the upper surface of the left wing and on the lower surface of the right wing as applicable.

(3) National Star Insignia on Helicopters. Four National Star Insignia shall be applied on the aircraft fuselage of helicopters. The insignia shall be located so that the insignia will be visible from each side, from above and from below. Because of helicopter design configuration the insignia shall be located so as to provide maximum identification. Such locations shall be standardized on like model and series helicopters.

b. "USAF" Marking. The marking "USAF" shall be applied on the lower surface of the left wing and the upper surface of the right wing on all USAF aircraft. The lower surface marking shall be omitted when thermal reflective finishes have been applied. The height and location of the marking USAF will correspond, if at all possible, with the National Star insignia applied on the opposite wing. The top of the letters shall be toward the leading edge of the wing.

c. "U.S. AIR FORCE" Marking. The Marking "U.S. AIR FORCE" will be applied and maintained on the left and right sides of the fuselage of all aircraft.

d. Serial Number Markings - Aircraft. The aircraft serial number marking is included in the Aircraft Data Legend marking.

e. Data Legend Marking - Aircraft. The Aircraft Data Legend reflects the owning military component, the aircraft type, model and series, aircraft serial number, the grade fuel to be serviced in the aircraft, and the identiplate location within aircraft. This marking may be located on the left side of the fuselage near the pilot's compartment or near the single point refueling location.

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(1) A typical Aircraft Data Legend marking follows:

## EXAMPLE:

U.S. AIR FORCE \_\_\_\_\_

AF SERIAL NO. \_\_\_\_\_

SERVICE THIS AIRCRAFT WITH

GRADE \_\_\_\_\_ FUEL

IDENTIPLATE LOCATION \_\_\_\_\_

(2) In the above format, the first entry identifies the owning military service and the aircraft type, model and series. The second line is to be used for the complete aircraft serial number. The next entry is to be used to identify the grade fuel to be serviced in the aircraft, and the last entry reflects the identiplate location.

## NOTE

The manufacturer's name or the popular name for an aircraft are specifically prohibited from use or display on any Air Force aircraft.

f. **Aircraft Radio Call Numbers.** Radio call numbers, will be applied to all USAF aircraft on each side of the vertical stabilizer, or in the case of aircraft with multiple vertical stabilizers, on the outboard side of each outermost vertical stabilizer. For helicopters with no vertical fins, the numbers will be applied to both sides of the fuselage or hull. (See Appendix A, figure A-4, Appendix D, figure D-35, and paragraph 3-3 for numeral dimensions and locations.)

(1) The aircraft radio call numbers consist of five numerals which are derived from the aircraft serial number. Normally, the last five numerals of the aircraft serial number are used to compose the radio call number. The first numeral of the contract year and the hyphen of the aircraft serial number will not be used in radio call numbers.

## EXAMPLES:

The radio call number of an aircraft whose serial number is 63-545143A will be 45143.

The radio call number of an aircraft whose serial number is 62-3467 will be 23467.

(2) In the event five numerals are not available in the aircraft serial number from which to derive the numerals required for the radio call number, the second numeral of the aircraft contract

year (omitting the hyphen) shall then be used, followed by necessary quantities of zero to prove five numerals.

## EXAMPLE:

The radio call number of aircraft Serial Number 59-12A would be 90012.

(3) All radio call number placards installed within aircraft, including helicopters shall reflect the same radio call number as applied on the aircraft exterior.

**3-3. GENERAL SPECIFICATION FOR LETTERING AND NUMERALS USED IN MARKING FOR AIRCRAFT.** Any style font/letter compatible with the vertical block type letter and arabic numerals of uniform size and shape should be used when applying markings on aircraft. (See Appendix A for construction of letters and numerals.) Unless otherwise specified herein, insignia-blue, color No. 15044, will be used for letters and numerals applied on gray or white surfaces. Gloss black, color No. 17038, may be used as a substitute for the insignia-blue. Insignia-white, color No. 17925, will be used on red finishes. Insignia red, color No. 11136, will be used on black finishes. Use Specification MIL-C-83286/MIL-C-85285 Aliphatic Polyurethane. Use of decals, both gloss and camouflage, conforming to MIL-P-38477, Type I, Class 2, are authorized for use in lieu of polyurethane paint. This is a premasked type decal that is applied over the primer and then painted over. The premask material is then removed which leaves all edges of the decal sealed with the topcoat of paint. Optional use of a gloss or clearcoat applied underneath aircraft decals for adhesion purposes on camouflage aircraft is authorized.

**3-4. PAINT FACILITY/FINISH IDENTIFICATION BLOCK.** All aircraft receiving a new paint finish will have a circular block of approximately 2 1/2 to 4 inches in diameter applied to the right side of fuselage on the underside and even with the leading edge of the horizontal stabilizer or wing by the paint activity who applied the new finish. See paragraph 1-1 if a specific weapon system TO conflicts.

a. This identification block/markings shall contain the following information:

(1) Contractor or overhaul activity Federal Manufacturer's code. (If no code exists, name and address.)

(2) Date of completion of paint application (day, month, year).

(3) Identification by specification number of every coating of the general system applied to the exterior of the aircraft.

b. Stencils or approved decals may be used for this marking. Border and letters shall be black, color No. 17038, for non-camouflaged aircraft and as per paragraph 5-5e, for camouflaged aircraft. (See figure A-5.)

NOTE

The above marking is a firm requirement and shall not be disfigured or oversprayed during touch-up operations. If touch-up requires over-spraying of this marking, it shall be replaced afterwards.



## SECTION IV

### SPECIAL PURPOSE MARKING FOR

### USAF AIRCRAFT

4-1. GENERAL. Unless otherwise specified, the dimensions, colors and materials required for USAF Standard Markings and Insignia, in Section III, also apply to Special Purpose Markings. Due to variance in equipment configuration and restrictions in the uses of some markings, special purpose markings may or may not be applicable to all aircraft. However, when applicable and authorized for use, special purpose markings will be applied in the dimensions, colors and locations as specified herein

4-2. AMERICAN FLAG MARKINGS. The display of the American Flag marking on aircraft exteriors is intended for specific uses which have national significance or U.S. diplomatic connotation. As such, the use of the flag marking will be restricted and approved only by Headquarters USAF/LGMY. The routine or occasional overseas flight of aircraft, the assignment of aircraft to foreign soil, or the intra-theater travel of overseas based aircraft are not sufficient reasons for use of the American Flag markings. The National Star Insignia and USAF markings painted upon aircraft exteriors in accordance with instructions contained herein, adequately identify these and other Air Force aircraft.

a. American flag markings are authorized for use only on the following aircraft:

- (1) Air Attache
- (2) Military Assistance Advisory Group (MAAG)
- (3) USAF Mission
- (4) Apollo Range Instrumentation Aircraft EC-135 (AFMC-ARIA) and NKC-135A SIN 53-3132 (BIG CROW).
- (5) 89th Airlift Wing
- (6) AMC/ACC airlift forces aircraft
- (7) Air Force Section Mission (U.S. Military Group Aircraft in Latin America).
- (8) National Emergency Airborne Command Post E-4 Aircraft.
- (9) 58th Airlift Squadron USAFE.
- (10) ANG and Air Force reserve airlift aircraft for which AMC/ACC is the gaining command.
- (11) E-3A aircraft assigned to 522AWACW.

(12) EC/RC-135 aircraft

b. The American flag marking, when authorized, shall be located on both sides of the rudder or vertical stabilizer above all other markings of significance. The flag shall be positioned horizontally and in such a manner that the union shall be uppermost. The bars of the flag shall appear to be trailing at all times. (See Appendix C.)

c. The following standard sizes are specified for American flag markings used on USAF aircraft:

- (1) 19 × 36 inches
- (2) 21 × 40 inches
- (3) 25 × 48 inches
- (4) 31.4 × 60 inches

#### NOTE

The flag or national insignia/emblem of any country, other than the United States of America, will not be displayed on any USAF aircraft for any reason.

4-3. UNITED STATES OF AMERICA MARKING.

a. The words UNITED STATES OF AMERICA are authorized to be painted on fuselage exteriors of the following aircraft authorized the American flag markings:

- (1) Air Attache
- (2) MAAG
- (3) USAF Mission
- (4) AFMC-ARIA
- (5) 89th Airlift Wing
- (6) Air Force Section Mission (U.S. Military Group Aircraft in Latin America).
- (7) National Emergency Airborne Command Post E-4 Aircraft.
- (8) 58th Airlift Squadron USAFE.

b. When authorized, the marking UNITED STATES OF AMERICA will be applied on both sides of the aircraft fuselage, parallel to and above the top of the cabin windows. The fuselage marking

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U.S. AIR FORCE, referred to in paragraph 3-2 will be removed from these aircraft. (See appendix C.)

**4-4. ORGANIZATION INSIGNIA OR EMBLEMS.** All proposed organizational emblems or insignia (Major Command, Wing, Group or Squadron) for use on aircraft or missiles, must meet the criteria of AFR 900-3 and be approved in accordance with the provisions of that document.

a. Approved organizational emblems or insignia may be placed on non-camouflaged aircraft. The Major Command Headquarters shall be the approving authority for the use of organization emblems on its aircraft and the precise location on the vehicle at which the emblem will be installed. The use and location of the emblem will be contained in the pertinent major command regulation.

b. In all cases, approved organization emblems to be installed on aircraft shall not exceed 2/3 the size of the fuselage national star insignia. Further, standard Air Force markings will not be altered or relocated to accommodate organizational emblems. Emblem location and dimensions will be the same for similar aircraft types and models. Whenever an aircraft is permanently transferred for active service, the transferring unit will remove its organizational emblems prior to transfer. Aircraft being deactivated or processed for storage may be exempted from the requirement to remove organizational emblems.

**4-5. OUTSTANDING UNIT AWARD MARKINGS.** A replica of the "Outstanding Unit Award" ribbon earned by an organization may be installed on the sides of the aircraft fuselage in a suitable location designated by the applicable major air command headquarters. Criteria regarding size and location as stated in paragraph 4-4 above is applicable except that the length of the marking shall not exceed 12 inches and the length to width ratio will be maintained at 4 to 1, i.e. 12 inches  $\times$  3 inches, etc.

**4-6. CREW MARKINGS.** The names of pilot, crew chief or other members of the flight/ground crew may be applied to the exterior of the camouflaged or non-camouflaged aircraft at the option of the major command.

a. Generally, the names will be applied to the left side of the fuselage, (right side for helicopters) near the pilot's window and clearly visible from ground level. On large aircraft such as C-130, C-135, C-141, C-5, etc. where the names will not be clearly visible from ground level, the names may be placed adjacent to the forward crew/passenger entrance door, when approved by the major command.

b. Vertical/block lettering (see figure A-4), not higher than two inches, shall be used for the markings. On non-camouflaged aircraft, letters shall be yellow, color No. 13538, and on camouflaged aircraft paint letters in contracting camouflage color, on a background block only as large as needed to accommodate the information, 6 inches to 24 inches high, consistent with size of aircraft. If the background is presently black, the background block is not required. If the background is gray, the background block is not required, and the letters will be black, No. 37038. Background sizes and lettering should be standardized throughout the unit.

c. Markings may contain first names or initials and last names. Examples of markings are as follows:

PILOT: L/Col. W.B. JONES

CREW CHIEF: SSGT A. B. JOHNSON

or

CREW CHIEF: SSGT ALFRED B. JOHNSON

or

CREW CHIEF  
SSGT ALFRED B. JOHNSON

**4-7. LOCAL STATION NUMBERS AND MARKINGS FOR AIRCRAFT.** Where large numbers of aircraft are assigned to a station, or duplication of last three digits of aircraft serial numbers occurs on such a station, or where visibility at a station is extremely poor due to snow or dust conditions, the Major Command may request and the System Program Director (SPD) authorize the application of local "Station Numbers" as an aid to maintenance and operational control

a. **Station Numbers.** The "Station Numbers" will be located on the nose section of fixed wing aircraft and on deflector shields or other forward component of helicopters, as designated by the particular SPD. Numerals will not be more than eight inches in height and proportionate to the aircraft size and height. The "Station Numbers" will be removed prior to transfer.

b. **Markings.** Where large quantities of a similar type of aircraft are assigned to a station in the CONUS, Major commands may authorize a distinguishing colored horizontal stripe for application on both sides of the topmost portion of the vertical fin. A different color may be assigned each unit owning such aircraft. These stripes will be appropriately removed by the installing organization when the aircraft is to be transferred.



## NOTE

The above horizontal stripes will not be applied over apex antenna on vertical stabilizers, the painting of which would interfere with system operation. In such cases the six inch stripe will be applied immediately below the antenna on both sides of the vertical stabilizer.

4-8. AIR NATIONAL GUARD (ANG) AIRCRAFT. USAF exterior finishes, insignia and markings are applicable to ANG aircraft. In addition to standard USAF markings, ANG aircraft may be further marked with the state name, squadron insignia, and state insignia, including the ANG Minuteman decal in accordance with (IAW) ANGR 66-34 when approved. These may be obtained by each state IAW with instructions contained in Section I of this technical order.

## NOTE

States desiring to affix markings and/or insignia similar to those of their gaining Commands will obtain approval from their respective gaining Commands prior to marking aircraft.

4-9. USAF AIRCRAFT SUPPLIED UNDER MAP. All USAF aircraft that are to be reconditioned or rehabilitated for the Military Assistance Program (MAP) will be protected from corrosion by painting with standard Air Force material prior to delivery.

a. When a recipient country accepts delivery of Grant Aid aircraft in the CONUS and arranges for ferrying the aircraft with its own crew or agents, the title passes at that time to the recipient country, therefore, all USAF Insignia and markings will be removed prior to transfer. The recipient country will arrange to affix its insignia and markings on the aircraft prior to operation.

b. When Grant Aid aircraft are delivered by USAF pilots or by U.S. civilian or foreign national pilots under operation control of the U.S. Air Force, title will remain with the U.S. Government until the aircraft are delivered in the recipient country. Therefore, upon departure from the CONUS the aircraft will display temporarily installed USAF marking and will be cleared as USAF Military Aircraft. Temporary paint, shall be used for these markings. The temporary paint should be readily removable without harming the permanent finish.

c. It is the responsibility of the Chief of the Air Force Section of the MAAG, or appropriate military mission, to assure that USA insignia and markings are promptly removed upon arrival of the aircraft in the recipient country. In cases where the recipient

country does not have the capability to install its insignia and markings, arrangements will be made with the appropriate AFMC agency or System Program Director (SPD) to have this done during aircraft deprocessing.

d. Aircraft to be delivered in crates or as deck loads on carriers shall have all USAF insignia and markings removed prior to processing for shipment.

4-10. AIRCRAFT PROPELLER MARKINGS. All Air Force Aircraft propeller blade tips will normally be painted yellow. Measured from the tip of the blade toward the propeller hub, the width of the painted tip stripe will be four inches for propellers less than 15 feet in diameter. The blade tip stripe for propellers with diameters of 15 feet or larger will be six inches. Lusterless, aliphatic Polyurethane MIL-C-83286/MIL-C-85285 or Lacquer, Specification MIL-L-19538 Yellow, color No. 33538, will be used for this application. The only authorized exceptions to the above specified provisions are contained in the following paragraphs.

a. Propeller tips may be marked with a yellow light reflective liquid, aerosol spray type, when it is necessary to define the path of the propeller track in the dark.

b. Aircraft, whose primary mission is the transportations of VIPs, are authorized to have red, white, and blue propeller tips. Approval authority for designating these aircraft is limited to major commands and will not be delegated to any lower level of command. Indiscriminate approval of these markings will defeat the intent of this directive and therefore will not be condoned. The occasional use of aircraft to transport VIPs is not sufficient justification for the multi-colored propeller tips.

(1) Red, white, and blue propeller tips are authorized for the following aircraft:

- (a) Air Attache
- (b) Military Assistance Advisory Group (MAAG)
- (c) USAF Missions
- (d) 89th Airlift Wing

(2) When authorized, the red, white, and blue stripes will be painted in that order on each blade, from the blade tip toward the hub.

(a) For aircraft propellers less than 15 feet in diameter, each stripe will be one and one-half inches wide.

(b) For aircraft propellers 15 feet or more in diameter, each stripe will be two inches wide.

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## NOTE

Propellers shall be checked for balance after complete finishing and required markings have been applied. Minor touchup is authorized between overhaul periods. However, care shall be taken to insure that a proportionate quantity of paint is applied on each blade.

4-11. **HELICOPTER ROTOR BLADE MARKINGS.** Classification numbers shall be stenciled on the main rotor blades of all helicopters by facilities authorized to balance or alter the blades. Three numbers, in decimal form, shall be utilized; the first shall be the weight of the blade in pounds; the second number shall reflect the distance in inches from the center of rotation to the center of gravity of the blade; the third number shall be the distance in inches from the leading edge of the blade to the center of gravity of the blade chord-wise. **EXAMPLE:** 57.2-75.5-5.2, indicates that the blade has a weight of 57.2 pounds, with the center of gravity 75.5 inches from the center of rotation, and the chord-wise center of gravity is 5.2 inches from the lead edge of the blade. Stenciling, approximately 3/4 inch in height, shall be accomplished with a paint or dope which contrasts well with the color of the blade. The preceding information is to be stenciled on the flat surface of the ground side of each blade at the inboard or butt end of main rotor blade.

## NOTE

The color bands installed by the contractor on the tip of main rotor blades shall be maintained along with matching colors on the housing. Different colors are required on the blades for tracking as well as matching purposes.

4-12. **TAIL ROTOR BLADE MARKING.** To promote ground safety, all helicopter tail rotor blades, except Sikorsky blades utilizing "B" and "B" bonding or having vinyl plastic tape installed, shall be marked with a topcoat of aliphatic Polyurethane specification MIL-C-83286/MIL-C-85285 or lacquer, Specification MIL-L-19538 with a compatible primer coat as follows:

- a. Prime surface with light coat of primer.
- b. Apply a 6-inch band of red color No. 31136, to the tail rotor tip followed by a six inch band of insignia white color No. 37925 and another 6-inch band of red color No. 31136.
- c. Following the second band of red color No. 31136, apply a band of black color No. 37038, to within 6-inches of the hub.

- d. Paint the remaining 6-inches of the tail rotor blade with red color No. 31136.

## NOTE

- After these markings to the tail rotor blades of UH-1 helicopters, the use of a Strobex balancer will be used to rebalance blades.
- Identifying color bands painted on the tail rotor blade housing by the contractor shall be maintained and an identifying dot, approximately 1/2 inch in diameter, of the same color as appears on the housing shall be painted on the butt end of the blade for matching purposes.

4-13. **INSTALLATION OF PLACARDS IN AIRCRAFT.** Accomplish installation of aircraft cockpit placards by coating the front and back of the placard with a clear coat of aliphatic Polyurethane specification MIL-C-83286 or MIL-C-85285.

4-14. **IDENTIFICATION MARKINGS FOR JETTISONABLE AIRCRAFT COMPONENTS.** Color of the aliphatic Polyurethane specification MIL-C-83286 or MIL-C-85285 used to stencil numbers and letters on jettisonable aircraft components will be dependent upon the color that provides the greatest contrast with the surrounding area and in accordance with Section II, this technical order. The following components require identification.

a. Canopies. Jettisonable aircraft canopies shall have the aircraft radio call number stenciled on the outside or inside of the canopy frame on the left hand side 6 inches from the forward end, using 1 inch high numbers provided sufficient space is available. If sufficient space is not available to accommodate 1 inch high numbers, they will be as large as space permits.

b. Ejection Seats. All aircraft equipped with ejection seats shall have the aircraft radio call number stenciled on the front side of the seat back near the top edge or on the left side near the top edge. Whenever aircraft are equipped with more than one seat, each shall be further identified according to that used by the respective crew members, i.e. pilot, co-pilot, EWO, NAV, RAD-NAV and GUNNER. These titles shall be applied directly below the radio call number. All the above listed markings shall be applied utilizing one inch high numbers and letters. Position markings so as to avoid contact with parachute gear.

c. Jettisonable Components. Where jettison components such as wing and pylon tanks are interchangeable and are frequently removed and



installed, and create a problem of stockpiling components for a specific aircraft, the base supply account number as contained in USAF Supply Manual 67-1 will be applied to the component. The number will be stenciled on both sides and as near the center as possible using one inch high numbers. This does not apply to jettisonable seats, canopies or components that are not subject to frequent changes.

#### 4-15. MARKING OF EMERGENCY LIGHTING (FLASHLIGHT) - CARGO AND TRANSPORT TYPE AIRCRAFT.

a. Cargo and transport type aircraft which have flashlights located adjacent to each natural or emergency exit as an emergency lighting system will have a band of phosphorescent paint, Federal Specification TT-P-54, or a water-based coating color No. 13538 or a reflection tape (IND-STD ASTM D4956), approximately 1/2 inch wide applied around the base of the flashlight mounting. This will provide a rectangular frame outlining the light. The paint may be applied to the mounting flanges along the sides of the light holder if the installation is such that the paint cannot be applied to the surface on which the light mounting is installed.

##### NOTE

3M Retroreflective and Photoluminescent sign materials may be used as substitute materials for paint meeting specification TT-P-54 or tape meeting specification ASTM D4956.

b. Allow the phosphorescent paint to dry approximately 8 hours, then apply a protective coat of varnish, Federal Specification TT-V-109, or clear coat of a aliphatic Polyurethane specification MIL-C-83286 or MIL-C-85285 over it. This will lengthen the useful life of the paint.

#### 4-16. MARKING FOR WALKWAYS AND HONEYCOMB PANELS.

a. Walkways and Steps. In cases where they do not contrast in color with adjacent areas, walkway areas shall be bounded by a camouflage/flat black color No. 37038 line for a light background or a camouflage/flat white color No. 37925 line for a dark background, 1/2 inch wide, and marked with word "WALKWAY" at sufficiently frequent intervals to indicate the walkway area. Steps shall be suitably indicated at all points on the aircraft.

b. Honeycomb Panels On Airplanes. Honeycomb panels (thin skin) for wing upper surfaces shall be distinctly marked by a 1-1/2 inch wide stripe of hash marks; each hash mark shall be 2 inches long, measured along the stripe with 2 inches between marks. The marks shall slope 45 degrees. The marks shall be painted on the material conforming to that to which applied in yellow, color No. 13538.

4-17. MARKINGS FOR DRONES. Drones are any remotely controlled, recoverable, pilotless aircraft developed or modified to perform the mission

of a target or weapon system. Drones will be marked and painted as follows:

a. Target Drones. Target drones for weapons evaluation, crew training, etc., shall be painted International Orange, color No. 12197 with Specification MIL-C-83286 or MIL-C-85285 material.

##### NOTE

Normally, weapons systems that have been modified into drones will not be painted.

b. Weapon System Drones. Weapons system drones/RPV's may be developed, tested and deployed painted in the color scheme required for mission accomplishment. The paint schemes for these drones shall be approved for the intended purpose(s) as directed by AFR 66-34/AFI 21-105 and the specific technical order applicable to the drones. The Air Force standard finish materials in the color(s) required will be used to paint the exterior(s) of these drones.

##### NOTE

All numerals, letters and markings, except the National Star Insignia applied on International Orange shall be black MIL-C-83286/MIL-C-85285, color No. 17038 (see Appendix A).

4-18. MARKINGS FOR SEARCH AND RESCUE AIRCRAFT. Aircraft engaged in search and rescue operations shall have markings applied as indicated in following paragraphs using MIL-C-83286/MIL-C-85285.

a. Wing Tips. Upper and lower surfaces of both wing tips shall be painted yellow-orange, color No. 13538, from the wing tip inboard a distance equal to 7% of the wing span (float excluded). A black border 6 inches wide shall be added inboard, using color No. 17038.

b. Vertical Stabilizer and Rudder. Using vertical block type white letters, color No. 17875, the word RESCUE shall be applied on a blue background, color No. 15044, to both sides of the vertical stabilizer and rudder appropriately spaced between the radio call numbers and the top of the vertical stabilizer. The letters will be a minimum of 12 inches in height. If larger lettering is used, the background should be increased proportionally. A 3-inch wide band, yellow orange, color No. 13538, shall be applied at the top and bottom of the blue background.

4-19. AIRCRAFT CONSPICUITY AND ARCTIC MARKINGS. Conspicuity and Arctic markings are of the same color and configuration for each aircraft and are as illustrated in Appendix B of this technical order.

a. Conspicuity Markings. Conspicuity markings may be used under special conditions on non-camouflaged aircraft and are intended to enhance air-to-air visual detection for safety purposes. Conspicuity markings will not normally be applied to

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Air Force aircraft except for those specifically authorized by this technical order as approved by Hq USAF/LGMY for specific aircraft engaged in special operations.

(1) Aircraft Authorized Conspicuity Markings. The following aircraft shall be required to have conspicuity markings applied:

(a) Aircraft used primarily as target aircraft.

(b) AFMC aircraft specifically designated by the major command headquarters, due to peculiar requirements of research and development programs. Included may be director and drone aircraft.

(c) Flight inspection aircraft.

1 To enhance air to air low level visual detection of aircraft performing airborne flight inspection of traffic control facilities, these aircraft shall be painted the standard Air Force gray, color No. 16473, and white, color No. 17925, with conspicuity markings as specified in appendix C - Special Purpose Aircraft Markings.

2 Special Conspicuity Markings are authorized only when 75% or more of the mission flying hours are utilized in enroute/on facility time.

b. Arctic Markings. The use of Arctic markings are intended to facilitate the location of aircraft accidentally downed in regions covered by ice or snow. Arctic markings will be applied to aircraft assigned for operation in the Arctic region during the period from 15 October through 15 April or for at least a six month period in Antarctica. In North America, for purposes of this technical order, the Arctic region is that territory north of the 50th parallel of latitude.

(1) Arctic Marking Exemptions. Aircraft in the following categories are exempt from compliance with arctic marking requirements:

(a) Air Attache assigned aircraft.

(b) Aircraft scheduled for short periods of duty less than 180 days in designated Arctic/Antarctic areas.

(c) Active strike force and combat support aircraft assigned offensive missions into or over Arctic/Antarctic areas for less than 180 days.

(d) All camouflaged USAF aircraft.

c. Material Requirements For Conspicuity And Arctic Markings. The material requirements for Arctic and/or conspicuity markings shall be those compatible with the material over which it is applied. Normally, this will be MIL-C-83286, or MIL-C-85285 color No. 12197. Refer to TO 1-1-8 for application instructions.

d. Change In Aircraft Mission Assignments. In the event mission requirements change an conspicuity/arctic markings are not needed, or if such markings are detrimental to the safe accomplishment of the mission, the painted or film markings will be removed. When time permits the markings will be stripped from the aircraft surfaces. When emergency conditions dictate the need, the markings will be painted over.

4-20. ESTABLISHING NEW REQUIREMENTS FOR INSIGNIA AND MARKINGS. Requests for approval of other insignia and markings proposed for in-service aircraft not included in this technical order will be submitted to WR-ALC/LKJTC. Request for approval of new or additional insignia or markings must contain full justification and be accompanied by two sets of exterior surface drawings showing proposed marking locations on the aircraft, by applicable structural station number, water line reference points, dimensions and color scheme. Aircraft markings which reflect mission activity, crew accomplishments, and crew esprit de corps are allowed at the discretion and final approval of the senior logistics manager in each MAJCOM.

## SECTION V

### STANDARD MARKINGS, FINISHES, AND INSIGNIA

#### FOR CAMOUFLAGED USAF AIRCRAFT

5-1. **PURPOSE OF CAMOUFLAGE.** Camouflage is used for purposes of deception, to conceal materiel from undesired observation, or to confuse and mislead observers as to identity, extent, number, etc. Pattern camouflage is applied to an aircraft to lessen probability of detection visually or photographically, in flight or on the ground. Pattern camouflaging is based on optical principles that dictate certain non-reflective colors, color configurations and color proportions. Arbitrary applications of markings and color schemes other than those prescribed herein will defeat the purpose of camouflage and are not condoned. TO 1-1-8 provides instructions for surface preparation and application of coating materials for camouflaging aircraft.

#### 5-2. CAMOUFLAGE AUTHORITY.

a. Authority to camouflage aircraft will be granted only by Headquarters USAF. Major commands will forward requests to camouflage aircraft to Headquarters USAF, LGMV/XOOT/RDPN.

b. The management of Headquarters USAF approved aircraft camouflage programs resides at WR-ALC. All matters dealing with the adequacy of approved aircraft camouflage color schemes, effectiveness, techniques or principles shall be forwarded to WR-ALC/LKJTC for necessary action. Two sets of exterior service drawings showing proposed camouflaged color schemes must accompany the aircraft color scheme change request with a full justification. (See paragraphs 3-1 and 4-20.)

c. The application or removal of aircraft camouflage coatings under emergency conditions, whereby the need for the required action is apparent, may be directed by the local commander. However, at the earliest opportunity, WR-ALC and Headquarters USAF (LGMV/XOOT) will be informed of the action taken and reason therefore.

5-3. **AIRCRAFT CAMOUFLAGE MATERIALS.** The standard materials for the camouflage coating system and insignia/markings application is Aliphatic Polyurethane camouflage (lusterless) MIL-C-83286/MIL-C-85285. Decals may be used in lieu of paint for insignia and markings provided that they are made of a non-reflective decal material (see paragraph 3-3). Decals shall not be used with "gunship quality" schemes.

5-4. **CAMOUFLAGE PATTERNS.** Approved weapon system/camouflage pattern combinations are illustrated in appendix D.

a. Aircraft Surfaces. The camouflage patterns shall be applied in accordance with the specific aircraft illustrations. The illustrations are intended as guides. Minor variations in pattern are acceptable; however, care should be taken that proportion and balance of the different colors are approximately the same as the illustrations. Boundaries between colors shall be irregular as illustrated and fade into each other. Avoid sharp lines between colors.

b. Bottom Surfaces. Most camouflaged aircraft use a singular color on the underside of the fuselage, wings, horizontal stabilizer, and control surfaces as designed for the particular weapon system. The bottom color shall be brought up the sides of the fuselage to give the approximate side view appearance in accordance with the application illustration. The line between the underbelly color and the upper surface pattern shall be an irregular, indistinct, countershaded area. A sharp line and any regular repeating pattern such as a scallop will raise the risk of detection and compromise the overall camouflage effect. On low wing aircraft, the bottom color on the fuselage is brought into the wing root to meet the bottom color under the wing.

c. External Components. Engine nacelles, external tanks, pods and other mounted equipment shall be camouflage painted to agree with the aircraft scheme. Unless otherwise specified, the lower third of the surface shall be the same as the bottom color for the aircraft and the upper surfaces shall be pattern painted or painted a designated solid color as approved for the weapon system. With appropriate approvals, the entire surface of this equipment and pylons may be all painted one uniform color to improve component interchangeability on different aircraft or on different positions on the same aircraft. The extent to which this can be accomplished and the choice of color shall be in accordance with the system or item technical order when it involves a surface which is not covered or illustrated in this general manual.

d. Radomes, Antennae, and Antenna Covers. Antennae shall be treated in accordance with the System Program Director. Radomes and antenna covers should be oversprayed with the light coat of

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camouflage finish to make the camouflage effort complete unless the system manager determines that the paint deters operational capabilities and prohibits its use.

e. Walkways. Walkway borders shall be applied to the upper surfaces of camouflaged aircraft in black, color No. 37038.

f. Gunship Quality Paint Systems. The European I camouflage scheme and certain other weapon system-camouflage scheme combinations require the use of "gunship quality" paint. Gunship quality paint is special formulation polyurethane paint that is available in several camouflage color numbers. It meets physical requirements of MIL-C-83286 and MIL-C-85825, and certain additional requirements for gloss and sheen not presently standard under MIL-C-83286/MIL-C-85285. At the present time, this is a controlled source paint. The authorized sources are DeSoto, Inc Des Plaines IL and Berkley CA, Deft Chemical Coating, Irvine CA and Crown Metro, Greenville SC. Always be certain that the paint vendor or immediate supply activity knows when you require gunship quality and that the paint is identified on the Qualified Product List. Standard camouflage in the same color numbers does not provide the required performance.

5-5. INSIGNIA AND MARKINGS. The following exceptions to standard USAF insignia and markings as listed in Section III are applicable to USAF camouflaged aircraft.

a. U.S. Air Force Markings. The "U.S. AIR FORCE" marking on the forward fuselage is not required.

b. National Star Insignia. The National Star Insignia shall be applied to the top of the left wing, the bottom of the right wing and on both sides of the fuselage in a miniaturized configuration. The standard design is illustrated in figure A-1.

c. USAF and Radio Call Number Marking. The "USAF" marking shall not be applied to the wings; but, shall be added immediately before the radio call number on the vertical fin if space is available. Otherwise, place directly over the radio call number. The radio call number and "USAF" marking shall be of a miniaturized configuration, unless the aircraft has been approved for distinctive unit aircraft markings as outlined in paragraph 5-9.

d. Location and size of miniaturized insignia and markings.

<u>MARKING</u>	<u>LOCATION</u>	<u>SIZE</u>
National Star Insignia	Top of left wing, bottom of right wing and both sides of fuselage on wing type aircraft.	15 inches star Insignia (except 60 inches on upper wing and 18 inches on fuselage, B-52 aircraft)
Radio Call Number	Both sides vertical stabilizer or tail boom (radio call numbers will be constructed in accordance with paragraph 3-2. See paragraph 5-9 and Appendix D for distinctive unit markings.)	Six inches high (except 12 inches high on B52 aircraft)
Radio Call Number	At Air Refueling receptacle	Four inches high
USAF	Immediately before radio call number if space available. If not, directly over radio call number.	Six inches high (except 60 inches on upper wing B52 aircraft)

## NOTE

To assist in the identification of aircraft during ground handling, it is permitted to apply the last three numerals of the aircraft serial number to the lower forward portion of the fuselage side in 6 inch letters.

e. Colors. Colors of insignia and markings shall be as follows:

(1) Gunship quality camouflage shall use only gunship quality contrasting colors for all exterior insignia and markings. Waiver or deviation will be considered only when the requirement for gunship quality is no longer essential.

(2) Standard camouflage exterior insignia and markings shall be subdued black, color No. 37038 except those special markings covered in paragraph (a), (b) and (c).



(a) Required safety precautionary markings shall be red, color No. 31136.

(b) External markings identifying escape hatches, doors, exits and emergency entry or exits should be painted in contrasting gunship quality color. (See paragraphs 6-15 through 6-17 which apply to standard camouflaged and uncamouflaged aircraft.)

(c) Camouflage schemes in the SEA configuration use white markings on black backgrounds except with gunship quality which shall use contrasting gunship quality color.

5-6. INSTRUCTIONAL MARKINGS. Instructional type markings for servicing, ground handling, etc., shall be kept to the minimum required by the System Program Director (SPD) to be consistent with safety, performance and maintenance of the aircraft.

5-7. SQUADRON AND ORGANIZATIONAL MARKINGS. Squadron and organizational markings may be used on camouflaged aircraft. Use the same criteria for the development of size as is used on noncamouflaged aircraft. The width of the horizontal stripes applied to the upper extremity of the vertical stabilizers will be six inches.

5-8. ARMAMENT LOADS PLACARD. Placards indicating armament loads, when required, should be appropriately applied on camouflaged aircraft in accordance with SPD/MAJCOM instructions. (See paragraph 6-18, figures E-8 and E-9.)

5-9. DISTINCTIVE UNIT AIRCRAFT IDENTIFICATION MARKINGS. Distinctive unit aircraft markings may be applied to vertical fins of camouflaged combat support aircraft to allow aircrews to readily identify aircraft to their own unit or to other friendly units. The master coding system to be utilized is USAF wide to avoid code duplication among units. HQ ACC has been designated by HQ USAF as the Air Force single manager for the assignment of unit aircraft identification markings.

a. Essentially, the codes consist of: (1) two alphabetic letters, (2) two numerical digits or (3) an alphabetic letter and a numerical digit. Using major commands may authorize the use of these identification markings but shall receive the approved coding to be used from HQ ACC. When the codes are no longer required, the respective major command shall appropriately notify AAC.

#### NOTE

In no instances will these unit identification codes be installed or removed without the expressed knowledge and approval of AAC. Similarly, only AAC

may authorize changes in identification code assignments.

b. Instructions for the design, dimensions and location of the distinctive unit aircraft identification codes are contained in Appendix D.

c. Aircraft tail numbers (identified as serial number in applicable part of Appendix D) will consist of the first two and last three digits of the original serial number. When duplicate last three digits exist among aircraft with the same distinctive unit aircraft identification designator, the last four digits of the aircraft serial number shall be used. This number serves as the radio call number for aircraft with distinctive unit markings.

5-10. SPECIAL OPERATING FORCE (SOF) AIRCRAFT. The gray paint finish (Aliphatic Polyurethane MIL-C-83286/MIL-C-85285, color No. 16473) with standard Air Force markings is the normal exterior paint configuration for SOF aircraft. However, inasmuch as the SOF Aircraft are subject to various mission assignments, in different geographical locations and under varying circumstances, the specific mission will dictate the aircraft exterior configuration required for the affected aircraft. In all instances, changes in paint configurations of these aircraft will be accomplished only as a result of firm mission requirements and not for reasons of esthetics or personal preference.

a. Some major reasons which may require changes in the exterior paint configuration of SOF aircraft are:

- (1) Need for ground-to-air or air-to-air camouflage or conspicuity.
- (2) Need for air-to-ground or ground-to-ground camouflage or conspicuity.
- (3) National image or national interest.
- (4) Discrete aircraft employment.

b. Normally, request for approval of proposed changes to exterior paint configurations for SOF aircraft not engaged in combat operations shall be forwarded by the major command to USAF/LGMY/XOOT.

c. Whenever conditions warrant, the major command may authorize the application of needed exterior paint configurations for SOF aircraft engaged in combat operations without prior approval or higher authority. Whenever possible, Air Force standard materials will be used. All changes to SOF aircraft configurations shall be promptly reported to WR-ALC/LKJTC and to HQ USAF/LGMY and XOOT accompanied by appropriate descriptive 8" x 10" photograph and drawings on

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8" × 10" paper, reasons for the changes and results achieved.

5-11. NATO MARKINGS CODE NUMBERS. The application of North Atlantic Treaty Organization (NATO) code numbers cited in TO 42B1-1-15 shall supplement the applicable service points prescribed in Appendix E, this technical order. The codes will be applied immediately adjacent to the symbol as considered most practical. NATO code numbers may be omitted when not reflected in TO 42B1-1-15 or may be omitted on training type aircraft and other aircraft not subject to being serviced at overseas location.

## NOTE

Certain provisions of this section are subject to internal standardization

agreements (see Air Standardization Coordinating Committee Air Standard 11/1D and NATO, STANAG 3109) and shall not be changed except under emergency conditions without prior coordination with the Air Standardization Coordinating Committee (ASCC). All requests or recommendations for changes in existing markings or supplemental markings will be submitted to WR-ALC/LKJTC, for appropriate action.

## SECTION VI

SERVICING, GROUND HANDLING, EMERGENCY AND HAZARD WARNING MARKINGS,  
(NON-CAMOUFLAGED) AIRCRAFT

6-1. GENERAL. The requirement for and location of these markings will vary with the aircraft configuration. Printed information required in connection with ground handling or servicing symbols shall be painted in black or white depending on the background. Lettering sizes shall be in accordance with instructions in Appendix E. Capital vertical block letters and arabic numerals shall be used. (See figure A-4).

a. Identification Symbols. Symbols for the identification of servicing points, ground handling locations, emergency use and hazard warning shall be applied to required locations on all USAF aircraft to provide the following:

(1) Rapid identification of each required servicing point.

(2) Identification of the type of ground servicing required.

(3) Hazard warning or safety precautions which will prevent injury to personnel or damage to aircraft equipment.

(4) Rapid entry or exit from vehicle under emergency conditions.

b. Illustrations. Illustrations of the prescribed symbols to be used are contained in Appendix E. This technical order may be applied using appropriate paint or decalcomania. Symbol size shall be approximately four inches in the longest dimension; however, smaller sized symbols may be used if required by the item or area to be marked. Color requirement for symbols shall be as follows:

(1) Filling points symbols shall be colored black or white according to the background.

(2) Ground handling point symbols shall be colored yellow-orange, color No. 13538, and have a black or white outline according to the background.

(3) Safety or hazard warning symbols shall be colored red and have a black or white outline according to the background.

(4) Emergency exit or entry location markings will be colored orange-yellow, color No. 13538. Black markings, color No. 17038, will be used on yellow surfaces.

c. Locations. The location of each marking shall be dependent upon the existing available

space. They may be situated on the equipment concerned, directly below, adjacent to, or on applicable access panels. In event the service point or marking is concealed, arrows may be used to point out the location of the service point or markings. The arrow should bear a brief identification of the purpose for which it is applied, the applicable service point identification or precautionary warning marking.

6-2. NATO MARKING CODE NUMBERS. The application of North Atlantic Treaty Organization (NATO) code numbers cited in TO 42B1-1-15 shall supplement the applicable service points prescribed in Appendix E, this technical order. The codes shall be applied immediately adjacent to the symbol.

a. The application of NATO code numbers will be waived when it is not reflected in TO 42B1-1-15 or may be omitted on training type aircraft and other aircraft not subject to being serviced at overseas location.

b. Certain provisions of this section are subject to international standardization agreements (see Air Standardization Coordinating Committee Air Standard 11/1D and NATO, STANAG 3109) and shall not be changed except under emergency conditions without prior coordination with the Air Standardization Coordinating Committee (ASCC). All requests or recommendations for changes in existing markings or supplemental markings shall be submitted to WR-ALC/LKJTC for appropriate action.

6-3. HYDRAULIC SYSTEMS AND LANDING GEAR/STRUTS. Servicing instructions for hydraulic systems, landing gear and shock struts shall be provided on metal instruction plates or stenciled in a permanent and legible manner adjacent to charging points and test connections. (See applicable technical order.)

6-4. AIRCRAFT GROUNDING POINTS. All grounding points on all Air Force aircraft will be marked with part No. MS27606, decalcomania, ground here, international symbol. (See Figure E-3). Decals will be requisitioned from 652D ABG/IM McClellan AFB CA 95652, on AF Form 124A publications/forms requisition.

6-5. STORAGE BATTERIES. The notation "BATTERY LOCATION \_\_\_\_\_" with

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exact battery location given shall be placed on the left side of the fuselage.

a. The fore and aft location of the marking will be approximately in line with the trailing edge of the wing and at a point two or three feet off the ground with the aircraft in the wheels-up position and resting on the ground, or in case of aircraft having fixed landing gears, with the landing gear washed out.

b. In the event of interference with windows, enclosures, etc., the marking shall be placed as near the aforementioned location as is practicable.

c. In addition to the above markings, all battery locations on the interior of the aircraft will have the word "BATTERY" or "BATTERIES", as the case may be, permanently and conspicuously affixed to the battery casing or compartment. The marking shall be one (1) inch high letters. The color will be red, No. 11136, in accordance with FED STD 595.

d. Aircraft having exterior access to the batteries will have the word "BATTERY", "BATTERIES", or "BATTERY ACCESS" stenciled on the access door in one (1) inch high letters. The color for the exterior markings will be No. 11136 for non-camouflaged aircraft.

6-6. EJECTION SEATS. A red equilateral triangle with sides up to nine inches long, with the apex pointing downward shall be applied on each side of the fuselage adjacent to the explosive device. (See Appendix E.)

6-7. IDENTIFICATION OF BALLISTIC HOSE OR TUBING ASSEMBLIES. Ballistic hose or tubing assemblies leading to the ejection seat catapults shall be marked for ground rescue purposes. The marking on the hose or tubing shall be a band approximately eight inches long of yellow-orange enamel, Type 1, color No. 13538, conforming to Specification TT-E-489 or aliphatic Polyurethane MIL-C-83286/MIL-C-85285. The area selected shall be easily visible, readily accessible and as close as possible to the catapult.

6-8. CANOPY REMOVERS. Aircraft containing an explosive jettisonable canopy system shall be marked "WARNING THIS AIRCRAFT CONTAINS A CANOPY REMOVER CONTAINING AN EXPLOSIVE CHARGE" and such other pertinent notations as "SEE TO \_\_\_\_\_ for COMPLETE INSTRUCTIONS."

6-9. MARKING FOR ELECTRICAL CONNECTIONS. The following caution note shall be placed at points where it is necessary to break electrical connections when folding back or removing wings.

## CAUTION

Disconnect electrical wiring before removing wings.

6-10. MARKINGS FOR ENGINE REMOVAL. To facilitate engine removal, all points of disconnect will be painted with orange paint, color No. 12197, for identity.

6-11. MARKINGS FOR TANKS AND TANK FILLER AREAS.

a. Aircraft tanks, such as fuel, water/alcohol, engine oil, hydraulic fluid, deicing fluid, etc., shall have notations stenciled thereon, indicating tank capacity, type of liquid and liquid level restrictions.

b. Fuel filler caps shall be painted red, color No. 11136. Where flush type pressure caps, MS29525, are installed, three radial black lines (3/8-inch wide by one inch long typical), color No. 38078, shall be located to form an extension to the lines on the cap when the cap is in the locked position. A red band, one inch wide, around and two inches away from a fuel filler cap or cover door is optional.

c. Data, such as water-alcohol mixture or type and grade of other servicing fluids, shall be stenciled near the applicable filler cap in 1/2-inch high letters.

d. The following legend will be stenciled near fuel tank filler caps: "USE \_\_\_\_\_ OCTANE FUEL" or "USE GRADE \_\_\_\_\_ FUEL", as applicable.

6-12. MARKING FOR ENGINE COMPARTMENT FIRE ACCESS PANEL. The fire access panel or doors in the engine compartments shall have red, color No. 11136, border and identifying text as illustrated in Appendix E, figure E-4.

6-13. HELICOPTER TAIL ROTOR WARNING SIGN. A warning sign shall be painted on both sides of the tail booms of all helicopters employing vertical tail rotors. A typical example of the recommended warning is shown in Appendix E, and minor variations make it adaptable to all types of helicopters. The letters shall be approximately 2 inches high with warning arrow of appropriate size as indicated in reference figure.

6-14. PROPELLER WARNING STRIPES AND SIGNS.

a. Exterior. Mark that area of the fuselage which is in the plane of the propeller path with a red stripe three inches wide extending completely around the fuselage, whenever it does not interfere



with standard USAF markings, insignia, or color resistant finishes. (See Appendix E, figure E-10.)

#### NOTE

The propeller warning stripe shall not extend through standard USAF markings or insignia.

Maintain a space of 3 inches between the ends of the propeller warning stripe and any standard USAF marking and insignia. The word PROPELLER reading vertically from top to bottom shall be superimposed on this stripe in white, color No. 17925, letters 2 inches high placed at sufficiently frequent intervals to indicate the dangerous area. The word DANGER shall be applied perpendicular to the word PROPELLER on each side of the warning stripe, with an arrow pointing from the word DANGER toward the stripe. Letters in the word DANGER shall be two inches high and the arrows shall be 4 inches long. The word DANGER and the arrows shall be red, color No. 31136. The propeller warning stripe for these aircraft that have been painted jet black shall be white, color No. 17925. The word PROPELLER superimposed thereon shall be red, color No. 31136, the word DANGER and the arrows shall be white, color No. 17925.

#### NOTE

On aircraft having engines staggered on the wing, propeller warning stripe shall also be placed on the cowlings of the next inboard engine to mark the plane of rotation of the propeller disc.

b. **Interior.** An insignia red warning stripe 3 inches wide shall be marked inside the fuselage on both sides of bomb-bays, or other openings within 6 feet of either side of the propeller disc to warn personnel of the proximity of propellers, if such openings can be used as exits from the aircraft and if there is danger of personnel walking into propellers after leaving the openings. Stripes shall extend from the center of the fuselage or the top of the opening, whichever is higher, to the lowest extremity of the opening. The word PROPELLER, reading vertically from top to bottom shall be superimposed on the stripes in white, color No. 17925, letters 2 inches high, to indicate dangerous area. The word DANGER in red, color No. 31136, shall be applied perpendicular to and centered with respect to the word PROPELLER on each side of the stripe with a red, color No. 31136, arrow pointing toward the stripe. Letters shall be 2 inches high and arrows 4 inches long. (See Appendix E, Figure E-10.)

#### 6-15. REMOVABLE ESCAPE PANELS.

a. **Internal Markings.** Markings for identification of escape hatches, doors, and exits on the interior of aircraft shall be painted orange-yellow, color No. 13538. Use black, color No. 17038, on yellow surfaces. Materials for identification markings shall conform to Specification TT-E-489 or MIL-C-83286/MIL-C-85285. Retroreflective material conforming to Specification IND-STD ASTM

D4956 may be used for these markings to facilitate identification in the dark.

#### NOTE

3M Retroreflective and Photoluminescent sign materials may be used as substitute for tape meeting specification ASTM D4956.

(1) Paint an intermittent orange-yellow band to mark the periphery of the personnel escape exit. The segments of the band will have a minimum width of 1 inch and a maximum length of 2 inches, divided equally, if possible and practicable, between the door mounting and the escape door itself. Where the lining will cover the identification marking band on the inside of the aircraft, continue the marking onto the lining.

(2) The words EMERGENCY EXIT, in orange-yellow, shall be painted or stenciled on the escape hatch, door or exit or any covering thereof in the most readily visible location. Letters will preferably be 2 inches high and shall not be less than 1 inch wide.

(3) Paint handles, releases, catches and knobs for inside hatches and exit doors orange-yellow. Where lettering or marking areas are covered by lining (including sound proofing), the lining shall also be appropriately marked. Suitable descriptive wording, readily visible, shall be painted or stenciled on the door or structure of the aircraft, whichever is nearer the emergency release, to identify and explain its operation. This wording shall be at least 1/2 inch high and preferably 1 inch high. Use standard English terminology such as PULL, PUSH, TURN or SLIDE.

(4) Exits which are adequate for air, ground and ditching escape shall have the word EMERGENCY EXIT centered in the most visible location on the inside of the door or hatch.

(5) Exits which are not adequate for the above three methods of escape shall be marked EMERGENCY EXIT and for specific usage as follows: GROUND USE ONLY, GROUND AND DITCHING USE ONLY, etc.

#### b. External Markings.

(1) Markings identifying escape hatches, doors and exits on the outside of aircraft shall be orange-yellow, color No. 13538; on yellow surface use black, color No. 17038. If Polyurethane is used, it will conform to Specification MIL-C-83286 or MIL-C-85285. Retroreflective material conforming to Specification IND-STD ASTM D4956 may be used for these markings to facilitate identification in the dark.

(2) Mark all external releases for operation of emergency exit panels EXIT RELEASE on the outside of the aircraft to facilitate quick identification. The wording that describes the operation of

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the exit release will be standard English terminology such as PULL, PUSH, TURN or SLIDE. Letters shall be at least 1 inch high and preferably 2 inches high.

## NOTE

Certain provisions of this section pertaining to EMERGENCY Escape and Entry markings are subject to international standardization agreements (see ASCC Air Standard 51/2A and NATO STANAG 3230) and shall not be changes except under emergency conditions without prior coordination with the Air Standardization Coordinating Committee (ASCC). All requests for changes in existing markings or supplemental markings will be submitted to Headquarters WR-ALC/ LKJTC.

## 6-16. MARKINGS FOR FORCED EMERGENCY ENTRY OR EXIT.

a. Markings for aircraft emergency entry or exit shall normally be in orange-yellow color No. 13538. Use black, color No. 17038, on yellow-orange backgrounds. Paint will conform to Specification MIL-C-83286 or MIL-C-85285. Retroreflective material conforming to Specification IND-STD ASTM D4956 may be used for these markings to facilitate identification in the dark.

b. Secondary openings such as auxiliary exits, windows and navigator's domes are usually smaller than primary openings, making entrance or exit more difficult. If the structure immediately surrounding secondary openings, is free from heavy structural members such as bulkheads and main longitudinal member, and from oxygen, fuel and oil lines and battery leads, it shall be marked with an orange-yellow broken band. Place band at the extreme boundary of the above described area both inside and outside of the fuselage. Segments of the broken band shall be 1/2 inch wide, 1 inch long and approximately 12 inches apart. Where the band will be covered with sound proofing, the sound-proofing (or lining) shall be marked also. CUT HERE FOR EMERGENCY RESCUE shall be printed or stenciled inside of, parallel with and adjacent to the broken band identifying the area on the outside of the aircraft where forced entry can be made for rescue purpose. CUT HERE FOR EMERGENCY EXIT shall be painted on a similar location inside the aircraft. Letters shall be 1 inch high. If the area to receive the lettering is covered by sound-proof (or lining), the letters shall also be stenciled on the soundproofing (or lining).

c. Visually inspect the aircraft for areas which may be cut through for rescue when entrance or exit cannot be made in any other manner. Visual

inspection must be used because relocation and reinstallation of equipment and furnishings may have been made which would not be indicated on the installation drawing of the aircraft. These areas should be as close to normal stations of personnel as possible except that they shall not be placed where personal injury to occupants would probably result from forced entry. Paint or stencil corner markings on the inside and outside of the fuselage marking the limits of these areas. The horizontal and vertical bars of the corner markings shall be 3 inches long and 1 inch wide. CUT HERE FOR EMERGENCY RESCUE shall be painted or stenciled in the center of the four corner markings on the outside of the aircraft and CUT HERE FOR EMERGENCY EXIT shall be placed in a similar location inside the aircraft. Letters shall be 1 inch in height. Soundproofing, if installed, shall be painted or stenciled approximately. These markings need not be placed on aircraft which are of such construction that openings could not be cut into them safely.

## CAUTION

Cutting of fuel, oil, hydraulic lines, oxygen lines, or electrical wiring under crash conditions may result in a fire, or explosion, or increase the severity of an existing fire. These possibilities shall be taken into consideration when emergency escape areas are being chosen for identification markings.

## NOTE

3M Retroreflective and Photoluminescent sign materials may be used as substitute for tape meeting specification ASTM D4956.

## 6-17. SPECIAL MARKINGS FOR NORMAL/ EMERGENCY EXTERNAL CANOPY RELEASE ACCESSES ON JET AIRCRAFT.

a. All normal and emergency external canopy release accesses on jet aircraft will be painted orange-yellow, color No. 13538.

b. Canopies and hatches jettisoned by cartridge actuated devices shall be marked in accordance with the examples portrayed in (Appendix E).

6-18. ARMAMENT LOADS PLACARD. Placards may be applied either by painting or decal methods. When required, each System Program Director (SPD) is responsible to assure that standard armament placard locations are established for assigned aircraft, and that these requirements

are published in this technical order. (See Appendix E, Figure E-9).

a. Paint Method. If the painting method is desired, apply in accordance with dimensions and instructions in Figure E-8.

b. Decal Method. If the decal method is desired, apply them in accordance with instructions contained in Figure E-9.

#### NOTE

Decals may be obtained from SMALC, PDO 652D ABG/IM, McClellan AFB, CA 95652 on an Air Force Form 124A. Dash numbers (1) through (4) are applicable to standard Air Force camouflage patterns. Dash number (5) is applicable to standard non-camouflaged aircraft. Dash number (6) is

applicable to special project, black bottom, camouflaged aircraft. It is important that the background color be the same as the area to which applied on camouflaged aircraft; therefore, selection of the correct dash number when ordering is required.

6-19. INSTRUMENT STATIC OPENING MARKINGS. Instrument static opening (except as noted below) shall not have any finish applied within a one inch diameter circle around the opening.

a. F4 Aircraft. Static opening(s) on F4 aircraft is on the radome which must be coated. However, the red 1/2 inch wide circular band shall be applied around the static opening(s) and the legend shall be applied adjacent to the opening.



## SECTION VII

### IDENTIFICATION OF TUBES, HOSE AND PIPE LINES

#### FOR AIRCRAFT

7-1. GENERAL. This section prescribes the means for identifying the function, content and, if applicable, the hazard and direction of flow of pipe, hose and tube lines used in Air Force aircraft. The proper use of colors, words, symbols, tags and painted bands to identify functions, contents and hazards is specifically prescribed. Lines, as referred to herein, include any pipe, hose or tube used to convey liquids or gases. Rigid conduit used to house electrical wires of cables are included. Fittings, valves, conduit outlets and accessories such as pipe covering and hose clamps are considered parts of a line. (Appendix F contains illustrations of pertinent codes and symbols to be used). (See TO 1-1A-8 or the specific system/equipment TO for illustrations of pertinent codes and symbols used.)

#### NOTE

- International Standardization Agreement. Certain provisions of this section are subject to international standardization agreements and must not be changed except under emergency conditions without prior coordination with the Air Standardization Coordinating Committee (see ASCC Air Standard 17/3, STANAG 3104 and SEASTAG 3104). Therefore, all requests for changes in existing markings or supplemental markings will be submitted to HQ WR-ALC, Attn: LKJTC.
- This section contains the identification requirements of MIL-STD-1247 as applicable to aircraft.

#### 7-2. GENERAL CLASSIFICATION OF LINES.

- a. Cold Lines - Lines in which the temperature of the flowing medium is below minus 60 degrees Fahrenheit.
- b. Hot Lines - Lines on which the surface temperature ranges from 200 to 325 Fahrenheit.
- c. Instrument Air - Air used in conjunction with pressure operate instruments.
- d. Pneumatic - Air under pressure other than instrument air.

e. Compressed Gas - Any gaseous substance under pressure, other than air, not requiring other functional identification.

7-3. GENERAL MARKING OF LINES. Identify each line as to function, content, hazard and direction of flow, as applicable.

a. Function - is identified by use of words, colors and symbols. Coded tapes will normally be used for airborne lines, except that small tags of some light weight non-corrosive metal such as aluminum alloy, stamped with contents, pressure and direction of flow, may be used on airborne cold lines.

#### NOTE

Symbols and colors are not required on lines where identification is accomplished with aluminum alloy tag.

- b. Content - is identified by use of lettering and symbols.
- c. Hazard - is identified by lettering and/or symbol.
- d. Direction of flow - is identified by arrow. Use two-headed arrow for reversible flow.
- e. Pressure - is identified by numerals and lettering, indicating pounds per square inch (PSI).

#### 7-4. METHOD USED FOR IDENTIFICATION OF LINES.

a. Tape - Use color coded tape conforming to Specification MIL-T-9906 for identifying function of all lines less than four inches in diameter including hot lines where line surface temperatures do not exceed 325° Fahrenheit. Tapes may also be used in an oily environment provided adhesion can be maintained. Do not use tape in engine compartment where there is a possibility of tape being drawn into engine intake. Use Specification L-T-101, A-A-113 or L-T-99 tapes for further identification of lines. When applying tape to lines, the tape shall completely encircle the line. Thoroughly clean the portion of the line where the tape is to be applied. Place taped code on both ends of line. Insure that identification is visible in each compartment. Place identification tape immediately adjacent to all operating accessories such as valves, regulators, strainers, vents, etc.

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## NOTE

Cold lines may be identified by use of tape, provided adhesion can be maintained at cryogenic temperatures and can be read from point of operation.

b. Tags - Tags will not normally be used except for lines in an oily environment, hot lines exceeding 325° Fahrenheit and cold lines. Tags will be of self locking design as illustrated in Appendix F. Fabricate tags from aluminum alloy. Stamp to show function and contents (pressure, direction of flow, primary hazard, as applicable). Color coding is not required on aluminum tags. Locate metal tags adjacent to operating accessories, making certain they will not interfere with the operation of the accessory.

c. Paint conforming to Specification TT-E-489, or MIL-C-83286/MIL-C-85285 shall be used to identify lines in engine compartments where there is a possibility of tapes being drawn into engine intakes. Paint lines larger than four inches in diameter, except that cold lines, hot lines and lines in an oily environment, shall conform to the following requirements.

(1) Lines will be color coded with paint in accordance with Appendix F. Painted code bands will be located adjacent to operating accessories, function with branch lines and where lines pass through bulkheads.

(2) Stencils are suitable for painting the letters to identify the specific function and contents (working pressure, primary hazard, and direction of flow arrow, as applicable). Geometric symbols are not required where identification is accomplished with paints. Use black lettering on white background.

(3) Size of painted lettering and arrow.

(a) Lines four to eight inches diameter - lettering height 1-1/4 inches.

(b) Lines eight to 10 inches diameter - lettering height 2-1/2 inches.

(c) Lines over 10 inches diameter lettering height 3-1/2 inches.

(d) Width of arrow stem 1/8 maximum diameter of line. Total length of arrow will be equal to diameter of lines.

(4) Word Order - The words denoting function will appear first in the printed identification. The content description will appear immediately below the statement of function. Following below these, if applicable, will be the operating pressure, the painted arrow indicating direction of flow and the words denoting the hazard. Vertical spacing shall be such that all wording and flow symbols are evenly spaced from top to bottom of the viewing area.

7-5. ELECTRICAL CONDUITS. Identify wire carrying conduits with coded tape provided for electrical conduit. Add two additional markings (1) Usage, i.e., power, control, communication, etc. (2) Maximum voltage and type normally encountered, i.e., "115V 60 cycle AC", 28 VDC, etc. Conduit carrying a number of different wires serving different purposes will be marked "Electrical Conduit" (including symbol of it on tapes) only. However, those conduits which include high power lines and which constitute a hazard to operating personnel shall be marked to indicate the maximum voltage normally encountered.

7-6. FLEXIBLE CABLES. Whether metal or metal sheathed need not be identified.

7-7. AIR CONDITIONING DUCTS. Identify air conditioning ducts under 30 inches outside circumference with appropriate tape. Add tape indicating design temperature of flowing medium. Use paint (black lettering on white background) to identify larger than 30 inches outside circumference. Letter with 1-1/2 inch letters "Air Conditioning" in two lines, followed by third line indicating temperature of flowing medium. The sign should be as large as possible, but not to exceed 12 x 12 inches.

## **APPENDIX A**

### **STANDARD AIR FORCE AIRCRAFT MARKINGS**



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## A-1. NATIONAL STAR INSIGNIA.

a. Dimensions. (Figure A-1.) The dimensions of the insignia shall be determined by the diameter of the circumscribed circle which is standardized in multiples of 5 inches.

(1) The width of each end of the rectangle shall equal  $1/2$  the radius of the circle; the length shall equal 1 radius (excluding border).

(2) The width of the insignia - red stripe, horizontally centered in each end of the rectangle, shall equal  $1/6$  of the radius of the circle (excluding border).

(3) The width of the insignia - blue border shall equal  $1/8$  the radius of the circle (excluding border).

(4) Construction of the five pointed star may be accomplished by marking off five equidistant points on the circumscribed circle and connecting each point to the non-adjacent points.

## NOTE

The insignia-blue border and insignia-blue circle may be omitted when the National Star Insignia is applied on blue or black finishes.

## CAUTION

Sharp pointed, metal marking instruments (scribes) will not be used to lay out insignia and markings on USAF aircraft. Use only Aircraft Marking Pencil, MIL-P-83953.

b. National Star Insignia on Aircraft Wings. Each insignia will be positioned at a point inboard from each wing tip equal to  $1/3$  the distance from the wing tip to the wing-fuselage mating point. The border of the insignia will be tangent to the movable control surface cut-out.

(1) The wing insignia may be moved in the minimum required distance to avoid structures which would alter the insignia pattern. However, symmetry will be maintained with the USAF marking on the opposite wing surface.

(2) Normally, the wing insignia shall be positioned so that in normal flight attitude the top point of the star points forward and a line through the center of the insignia and the top star point is parallel to the direction of flight.

(3) On swept wings or wings of variable sweep aircraft, the National Star Insignia shall be positioned as illustrated in figure A-2. The insignia or any part thereof shall not extend to movable flight control surfaces. The insignia shall be applied so that the line through the center and the top point of the star is perpendicular to the constant 50% chord line of the wing.

(4) The National Star Insignia selected for the wing shall not exceed a maximum diameter of 60 inches nor have a minimum diameter of less than 20 inches (excluding border). The diameter of the circumscribed circle will be the standard size closest to but not exceeding 75% of the distance between the wing leading edge and the moveable surface cut-out at the point of application.

c. National Star Insignia on Aircraft Fuselage. The insignia may be moved forward or aft the minimum distance required to avoid transparent material, or areas exposed to extreme heat or fluids which would scorch, deteriorate or otherwise damage the insignia. The insignia may extend over doors and emergency exits, but the insignia shall not extend over the window areas or other such openings which would change the design of the insignia.

## NOTE

The insignia will be the standard size closest to, but not exceeding, 75% of the fuselage height at the point of application. The diameter of the blue circle will not exceed 50 inches nor be less than 15 inches (excluding border) unless otherwise indicated in the illustrated portion of this technical manual. Symmetry will be maintained when applying the insignia on each side of the fuselage.

d. National Star Insignia on Helicopters. The dimensions of the insignia shall be determined by the diameter of the blue circle. The diameter of the insignia will not exceed 50 inches nor be less than 15 inches. The selected insignia will be the standard size closest to, but not exceeding, 75% of the fuselage height or width at the point of application. Symmetry will be maintained when applying insignia on each side of the fuselage. The National Star Insignia will be applied on vertical surfaces so that in normal flight attitude the top point of the star points upward; on horizontal surfaces the top point of the star will point forward in the direction of flight.

## A-2. U.S. AIR FORCE MARKING. (Figures A-3 and A-4.)

a. Letter width shall be equal to  $2/3$  the letter height, except that the width of the letter "I" shall be equal to  $1/6$  of the letter height."

b. Letter stroke and spaces shall be equal to  $1/6$  the height, except that the space between "period" and "A" shall be  $1/3$  letter height.

c. The space between AIR and FORCE shall be one letter width.

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WHEN REFERENCE IS MADE TO SIZE OF THE INSIGNIA, THE REFERENCE IS TO THE SIZE OF THE BASIC CIRCLE ON WHICH THE WHITE STAR IS CONSTRUCTED, AND NOT TO THE OUTER EDGE OF THE BLUE OUTLINE.

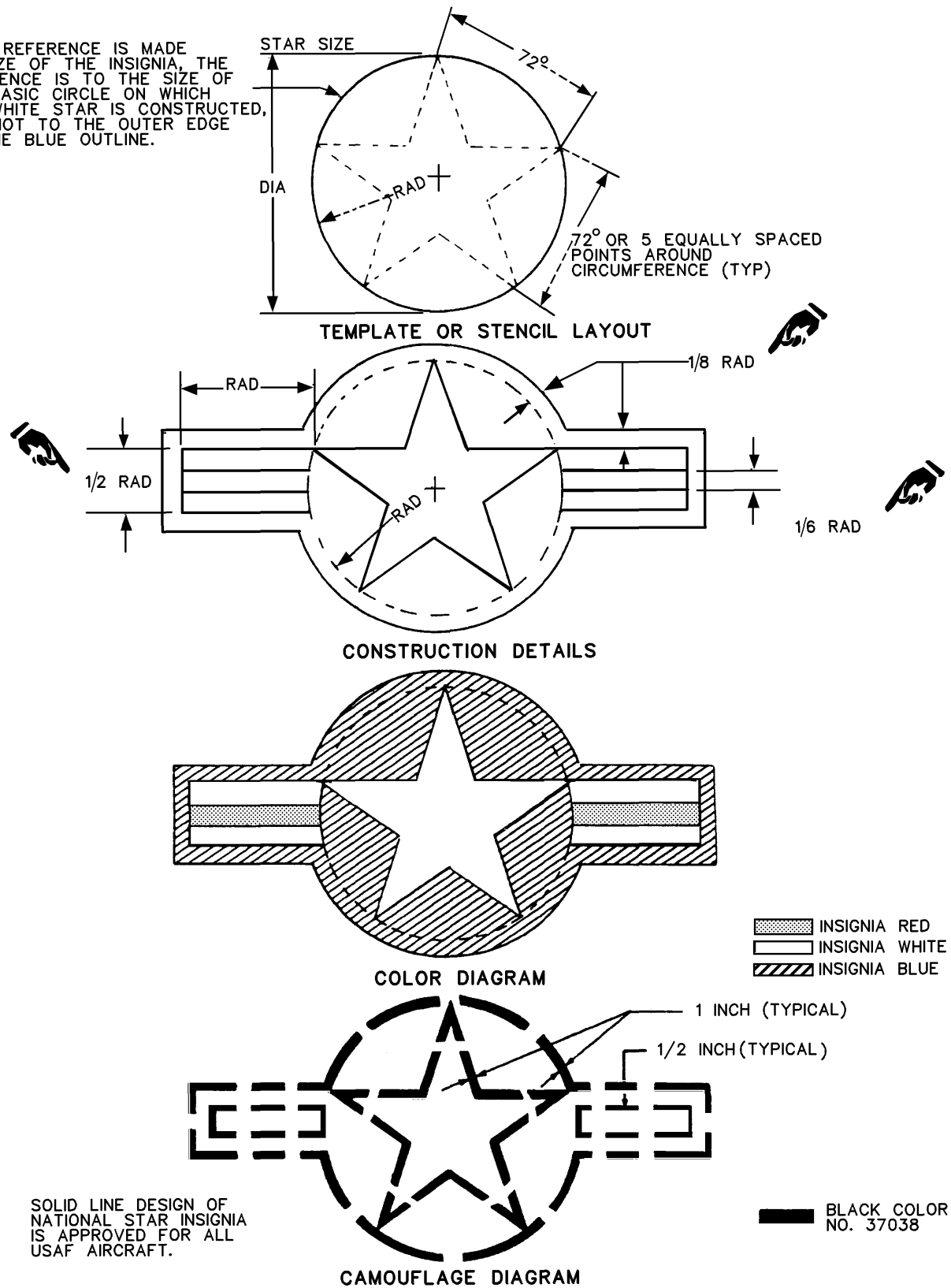


Figure A-1. National Star Insignia

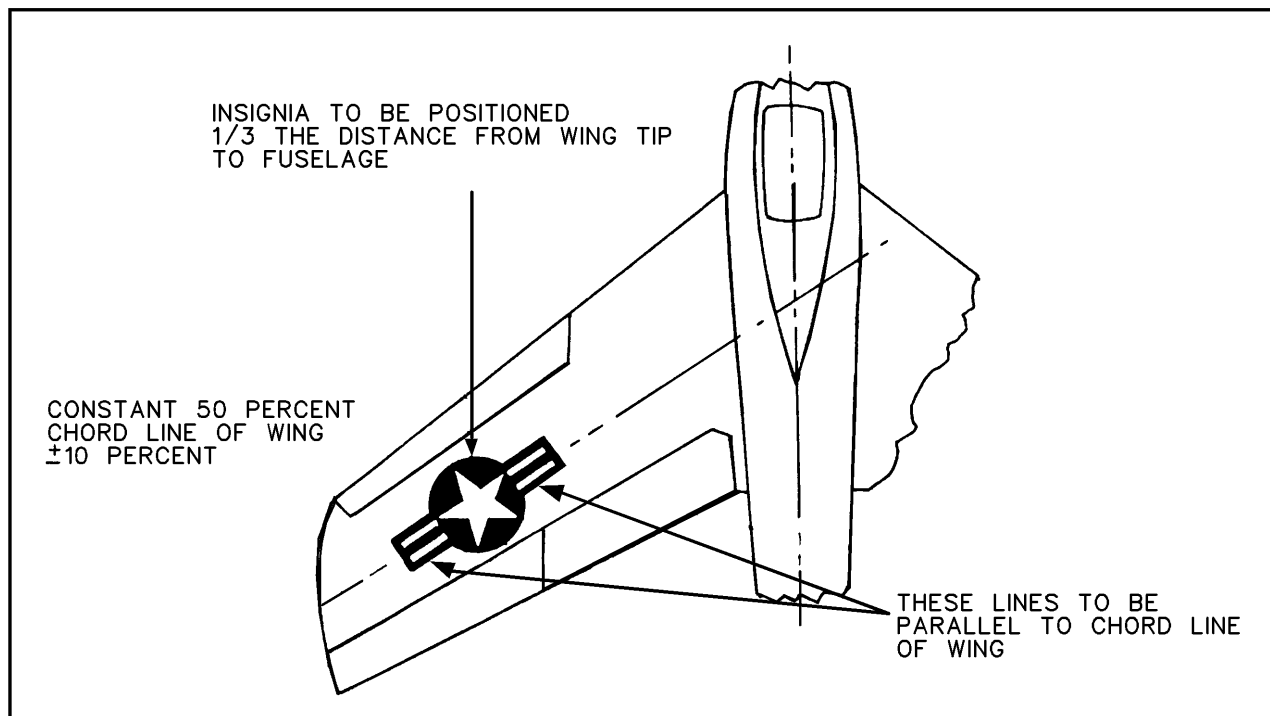


Figure A-2. National Star Insignia on Swept Wings.

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# U.S. AIR FORCE USAF

STENCILING EXAMPLE OF  
AIRCRAFT MODEL DESIGNATION, SERIAL NUMBER AND FUEL REQUIREMENT



U.S. AIR FORCE (MODEL DESIGNATION)

AF SERIAL NO. \_\_\_\_\_ A

SERVICE THIS AIRCRAFT WITH  
GRADE \_\_\_\_\_

IDENTIPLATE LOCATION \_\_\_\_\_

\_\_\_\_\_

*Figure A-3. U.S. AIR FORCE, USAF and Aircraft Model Designation Serial Number, and Fuel Requirement*

## FORM OF LETTERS AND NUMERALS



VERTICAL BLOCK TYPE/  
STYLE FONT/LETTERING/  
ARABIC NUMERALS

A B C D E F G H I J

K L M N O P Q R S

T U V W X Y Z

1 2 3 4 5 6 7 8 9 0

WIDTH OF LETTERS TO BE  $\frac{2}{3}$  OF HEIGHT

WIDTH OF LETTERS "M" AND "W" SAME AS HEIGHT

WIDTH OF LETTER "I" AND NUMERAL "1" TO BE  $\frac{1}{6}$  OF HEIGHT

STROKE TO BE  $\frac{1}{6}$  OF HEIGHT

SPACE BETWEEN LETTERS AND NUMERALS TO BE  $\frac{1}{6}$  OF HEIGHT

SPACE BETWEEN WORDS TO BE  $\frac{2}{3}$  OF HEIGHT

## VERTICALLY APPLIED LETTERING

SPACE BETWEEN LETTERS AND NUMERALS  $\frac{1}{6}$  HEIGHT

SPACE BETWEEN WORDS SAME AS HEIGHT

Figure A-4. Form of Letters and Numerals

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PAINTED

BY \_\_\_\_\_

DATE \_\_\_\_\_

PRIMERS \_\_\_\_\_

TOP-COAT \_\_\_\_\_

*Figure A-5. Typical Marking For Paint Facility/Finish Identification Block*



**APPENDIX B**  
**USAF AIRCRAFT FINISH AND MARKING**  
**SPECIFICATIONS AND ILLUSTRATIONS**

NOTE

1. THIS APPENDIX COVERS ONLY UNCAMOUFLAGED AIRCRAFT. SEE APPENDIX D FOR INFORMATION PERTAINING TO CAMOUFLAGED AIRCRAFT.
2. FORMER FINISH SYSTEM(S) WILL BE USED UNTIL REPLACEMENT (DUE TO DETERIORATION OR REMOVAL FOR INSPECTION) IS REQUIRED. THE SYSTEM(S) WILL BE MAINTAINED BY TOUCH-UP, ETC. USING THE MATERIALS LISTED FOR THE SYSTEM. WHEN COMPLETE REPLACEMENT (DUE TO DETERIORATION OR REMOVAL FOR INSPECTION) IS REQUIRED THE STANDARD SYSTEM MATERIALS AS LISTED SHALL BE USED (SEE PARAGRAPH 2-2 FOR POLICY GUIDELINES).

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*B-52 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-1)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 36 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	60 inch star	Background, border - 15044, Stars and Bars -17875, Stripes - 11136
D	Top surface of left wing (ONLY)	50 inch star	
E USAF	Top of right wing (ONLY)	60 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	18 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
I Walkway Border	Top both wings	2 inches wide	17038
H Anti-Glare	Top of fuselage in front of cockpit and in forward of Aft Radome		37038

*B-52 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	16473	MIL-L-19537/MIL-L-19538	16473	MIL-C-83286
Battery Compartment	17038	*	16473	MIL-C-83286
Landing Gear	17178	MIL-L-19537	17875	MIL-C-83286
Wheel Wells	YELLOW	MIL-P-8585	16473	MIL-C-83286
Flap Wells	YELLOW	MIL-P-8585	16473	MIL-C-83286
Radome	17038	MIL-C-7439 Class II	17038	MIL-C-83231, Type II
Relief Tube Areas				
Walkway				MIL-W-5044, Type I
Engine Exhaust Path				
White Caps as Required				
KK Lower Fuselage	17875	MIL-C-27227	17875	MIL-C-83286
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				

TO 1-1-4

*B-52 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1) - Continued*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
OO Bottom Trailing Edge Wing	17875	MIL-C-27227	17875	MIL-C-83286
PP Nacelles lower surface Except Nose	17875	MIL-C-27227	17875	MIL-C-83286
QQ Bottom Surfaces of Horizontal Stabilizer	17875	MIL-C-27227	17875	MIL-C-83286

\*Polyclad 1201-25 and/or 1010-7

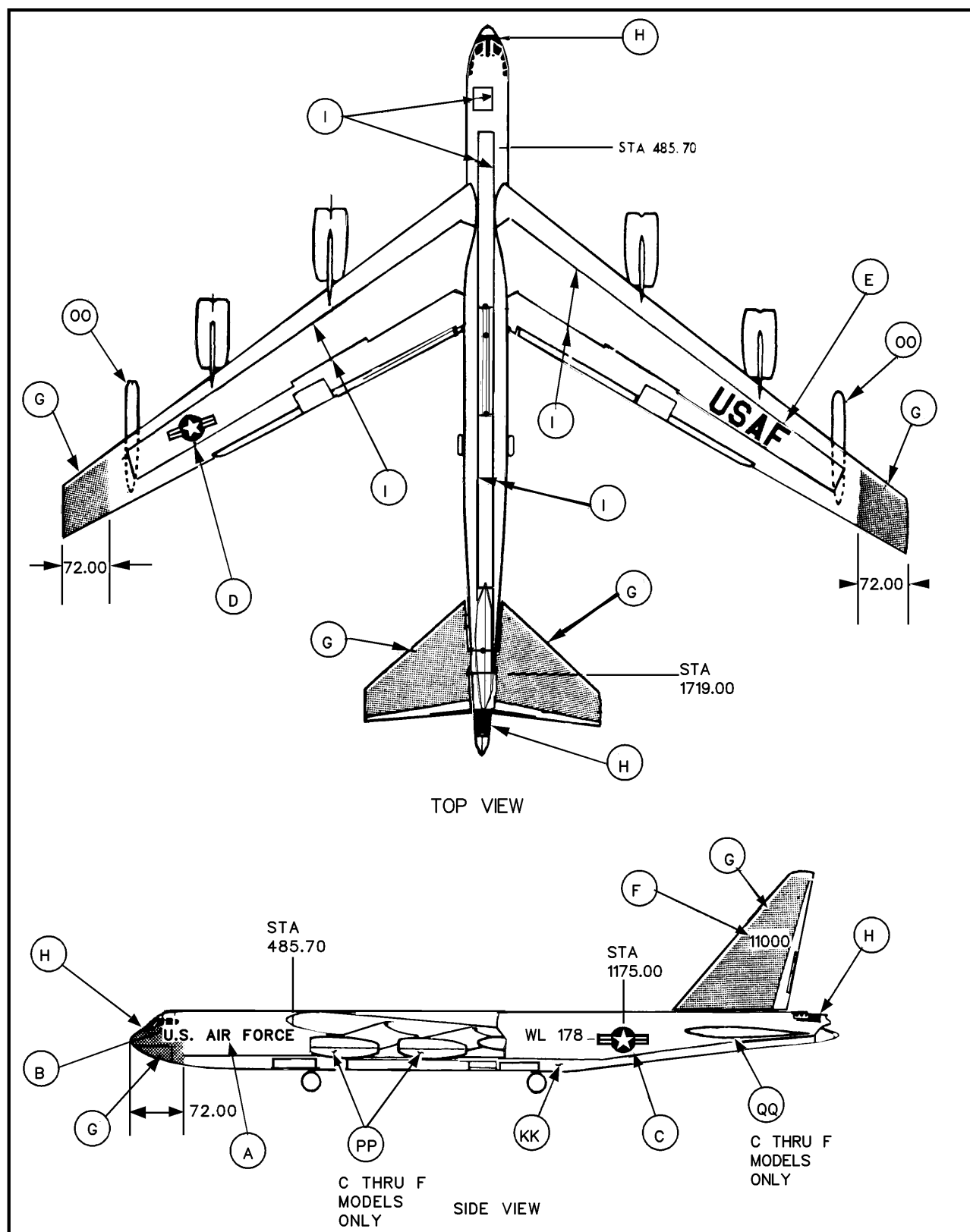


Figure B-1. B-52 Aircraft Marking Specification

## TO 1-1-4

*C-5 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-2)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 24 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage.	50 inch star	Background, border 15044, Stars and Bars - 17875, Strips - 11136
D	On under surface of right wing and top surface of left wing	50 inch star	
E USAF	Top surface of right wing and under surface of left wing	50 inch high letters	15044
F Call Numbers		18 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
H Walkway Border	Top both wings, fuselage and horizontal stabilizer	2 inches wide	17038
Anti-Glare			37038
I "MAC"	Each side VERT Fin	12 inch high letters	17875

*C-5 AIRCRAFT EXTERIOR FINISHING SYSTEM*

Area	PRESENT SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified			16473	MIL-C-83286
Battery Compartment			16473	MIL-C-83286
Landing Gear			17875	MIL-C-83286
Wheel Wells			17925	MIL-C-83286
Flap Wells			16473	MIL-C-83286
Radome			34092	MIL-C-83231, Type II
Relief Tube Areas			16473	MIL-C-83286
Walkways				MIL-C-83286
Engine Exhaust Path				
JJ White Caps as Required			17875	MIL-C-83286
Lower Fuselage				
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				



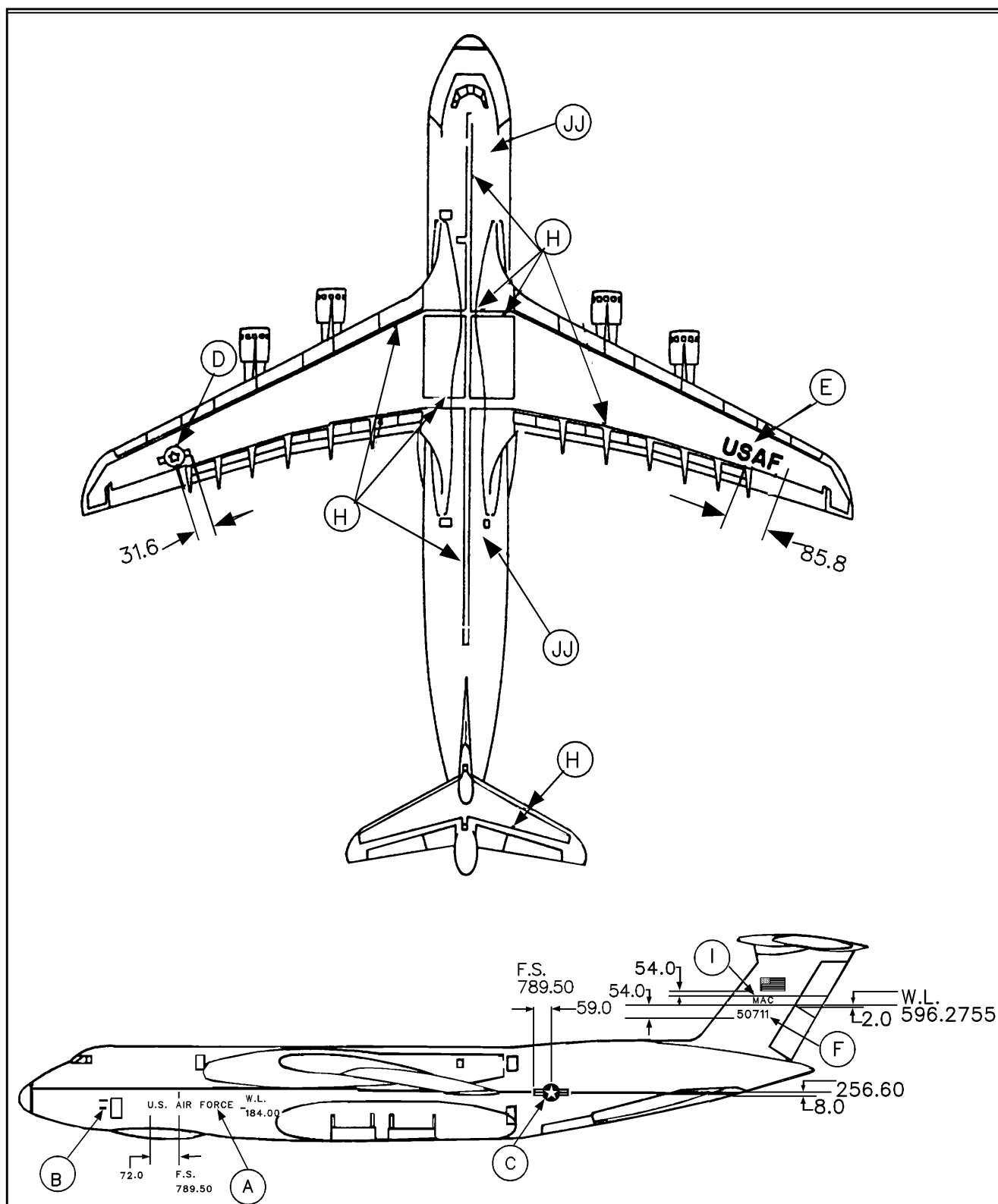


Figure B-2. C-5 Aircraft Marking Specification

TO 1-1-4

*C-9 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-3)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A. US AIR FORCE	Both sides of fuselage	Letters 24 inch high	15044
B. Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C. National Star	Both sides of fuselage,	25 inch star	Background, border 15044, Stars and Bars - 17875, Stripes - 11136
D.	On under surface of right wing and top surface of left wing	30 inch star	
E. USAF	Top surface of right wing and under surface of left wing	30 inch high letters	15044
F. Call Numbers	Both sides of vertical stabilizer	16 inch high numbers	17038
G. Arctic Markings			
H. Walkway Border	Top both wings in front	2 inches wide	17038
I. Anti-Glare	Top of fuselage in front of cockpit		37038

*C-9 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	16473	MIL-L-19537	16473	MIL-C-83286
Battery Compartment	16473	MIL-C-38412	16473	MIL-C-83286
Landing Gear	16473	MIL-L-19537	16473	MIL-C-83286
Wheel Wells	16473	MIL-L- 19537	16473	MIL-C-83286
Flap Wells				
Radome	17038	MIL-C-83231, Type II	17038	MIL-C-83231, Type II
Relief Tube Areas	16473	MIL-C-38412	16473	MIL-C-83286
Walkways				MIL-W-5044, Type I
Engine Exhaust Path	16473	MIL-C-38412	16473	MIL-C-83286
JJ White Caps as Required	17875	MIL-L-19537	17875	MIL-C-83286
Lower Fuselage			16473	MIL-C-83286
APU Exhaust Paths	16473	MIL-C-38412	16473	MIL-C-83286
Heater Exhaust Path	16473	MIL-C-38412	16473	MIL-C-83286
Plastic Parts	17038	MILC-83231, Type II	17038	MIL-C-83231, Type II
Horizontal Stab., Leading Edge			Bare	Bare
Vertical Stab., Leading Edge			Bare	Bare
Engine Pods, Leading Edge			Bare	Bare
Engine Pylons, Leading Edge			Bare	Bare
Wing, Leading Edge			Bare	Bare

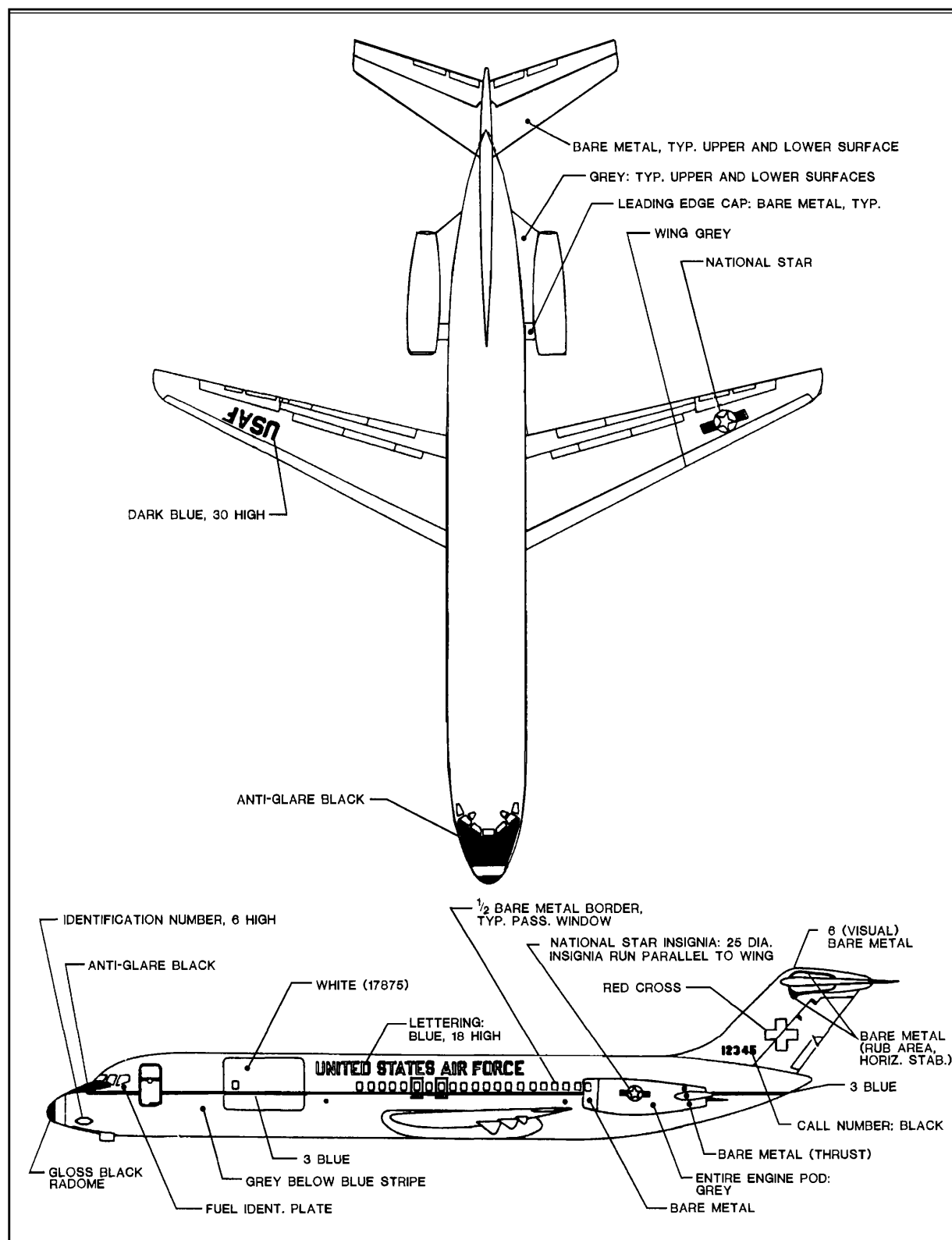


Figure B-3. C-9 Aircraft Marking Specifications

TO 1-1-4

*C-12 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-4)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A. United States of America	Centered above wings both sides of fuselage	Letters 6 inch high	17038
B. Model Designation, Acft S/N, Fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C. National Star	Both sides of fuselage upper surface on left hand wing, lower surface on right hand wing	16 inch star	Background, border - 15044 Stars and bars - 17875 Stripes - 11136
D. USAF	Upper surface - right hand wing Lower surface - left hand wing	20 inch high letters	17038
E. Call numbers	Both sides of vertical stabilizer	8 inch high numbers	17038
F. Artic Markings			
G. Walking Border			
H. Anti-Glare	Top fuselage forward of cockpit		37038
	Inboard side of left hand/right hand nacelle		37038
	Inboard side of left hand/right hand wing glareshield		37058
I. Propeller Tips	Forward side	4 inches from tip	13538
J. U.S. Flag	Centered both sides of vertical stabilizer	13 inches high	
K. Fuselage Lines	Both sides of fuselage (tapered)		17038
	Beginning at FS 14,000 running horizontally to tail		17043
L. Engine Nacelle Lines	Both sides of nacelle (tapered)		17038
	Beginning at approximately FS 80 running horizontally to end of nacelle		17043

## C-12 AIRCRAFT EXTERIOR FINISHING SYSTEM

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified			17875	MIL-C-83286
Battery Compartment			17875	MIL-C-83286
Landing Gear			17875	MIL-C-83286
Wheel Wells			17875	MIL-C-83286
Flap Wells			17875	MIL-C-83286
Radome				
Relief Tube Areas				
Walkways				
Engine Exhaust Path				
White Caps as Required				
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				
Aileron Wells			17875	MIL-C-83286
MM Lower Fuselage Surface to Blue Color			16473	MIL-C-83286
NN Lower Outboard Engine Nacelle			16473	MIL-C-83286
OO Forward Lower Fuselage to Gray Color			15090	MIL-C-83286
PP Middle Engine Nacelle			15090	MIL-C-83286

TO 1-1-4

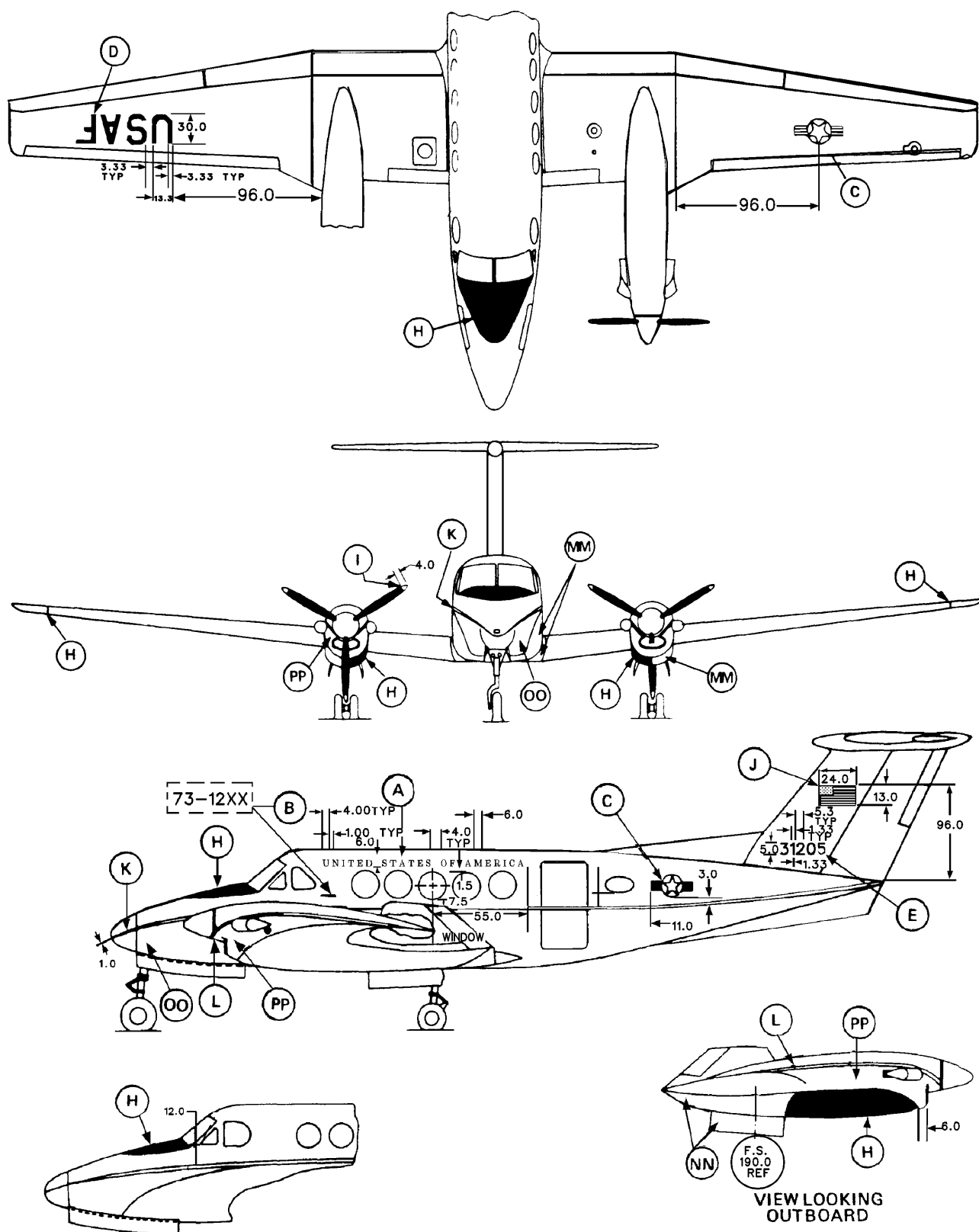


Figure B-4. C-12 Aircraft Marking Specifications



## C-130 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-5)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U. S. AIR FORCE	Both sides of fuselage	Letters 15 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage		Background, border - 15044, Stars and Bars - 17875, Stripes - 11136
D	On under surface of right wing and tip surface of left wing	50 inch star	
E USAF	Top surface of right wing and under surface of left wing	50 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	18 inch high letters	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
H Anti-Glare	N/A		37038
I Propeller Caution Band	On fuselage through same plane of propeller travel	3 inches wide	Band Arrows, Danger - 11136 Propeller 17875
J Propeller Tips	On both sides	*4 inches to tip	33538
K Walkway Border	Top of wing, fuselage and stabilizer	2 inches wide	17038

\*NOTE: Propellers 15 feet and over in diameter require 6 inch yellow tip.

## C-130 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	17178	MIL-L-19537	16473	MIL-C-83286
Battery Compartment	17038	TT-L-54	16473	MIL-C-83286
Landing Gear	17178	MIL-L-19537	17875	MIL-C-83286
Wheel Wells	17178	Corrogard 14	17178 ***	MIL-C-83286
Flap Wells	17178	TT-P-28	16473	MIL-C-83286
Radome	17038	MIL-C-7439, Class II	17038	MIL-C-83231, Type II
Relief Tube Areas	17038	TT-L-54	16473 & 17038	MIL-C-83286
HH Walkways		MIL-W-5044, Type I		MIL-W-5044, Type II

## TO 1-1-4

## C-130 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1) - Continued

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
II Engine Exhaust Path	17875	MIL-C-27227	16473	MIL-C-83286
JJ White Caps as Re- quired	17875	MIL-L-19537	17875	MIL-C-83286
Lower Fuselage				
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				
OO Upper Wing Panels	36231	MIL-C-38713	36231	*MIL-C-81733, Type III
Pitot Tube Support Sur- face			16473	**MIL-C-83286

\*System consists of 1 coat of MIL-C-81706, 1 coat of PR 1432G, 1 coat of PR 1436G, 1 coat of PR 1436AS, MIL-C-83286 overcoat when required to match color.

\*\*

1. Clean, corrosion treat, and prepare pitot tube support surface in accordance with TO's 1-1-691 and 1-1-8.
2. Apply a coating of PR-1432G corrosion inhibited primer, National Stock No. 8030-00-433-9032, to a thickness of 3-5 mils.

3. Allow PR-1432G to dry to a tack free condition and overcoat with MIL-C-83286 polyurethane paint to a thickness of 2 mils in accordance with TO 1-1-8.

\*\*\*

4. Optional color No. 36622, MIL-C-83286.

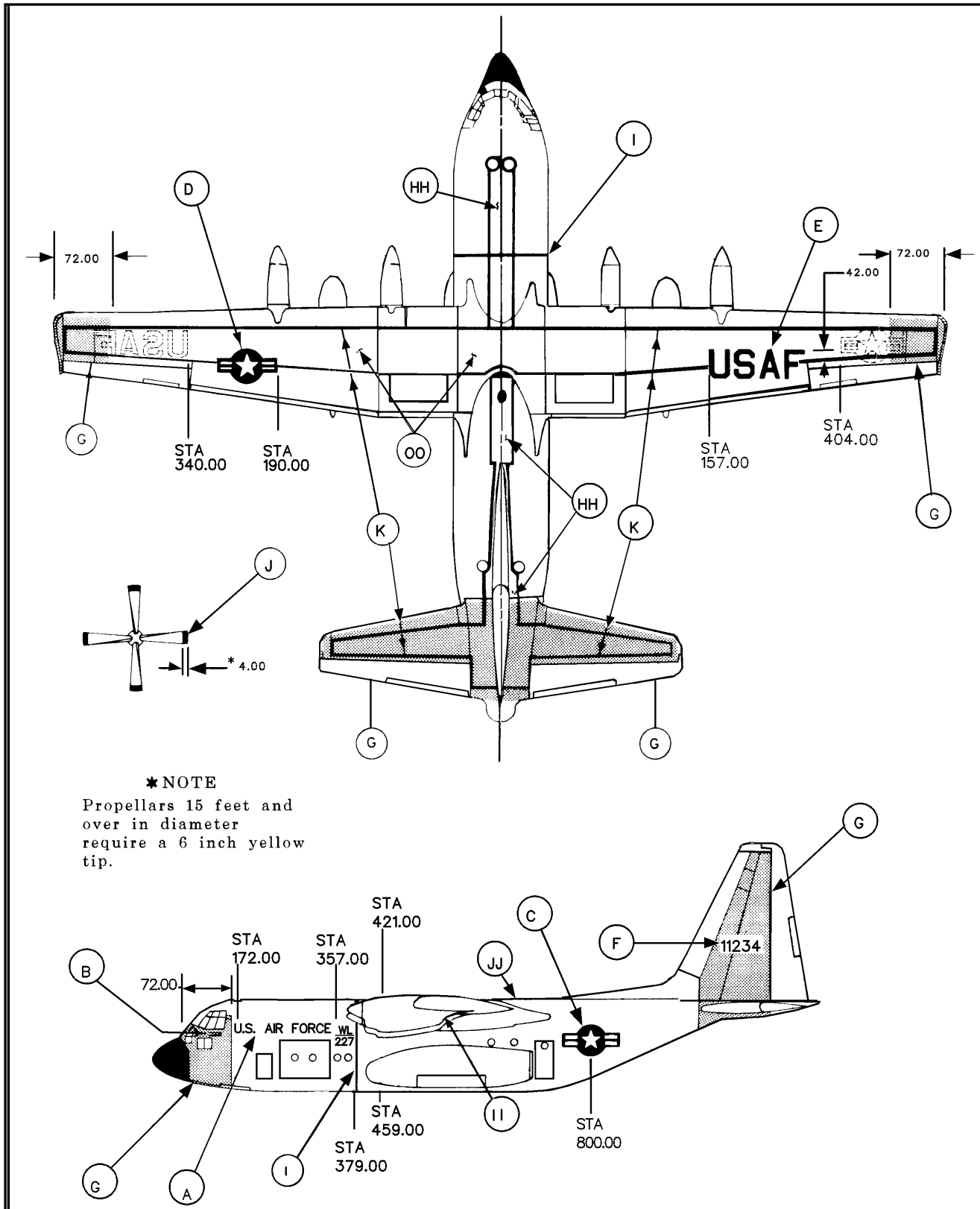


Figure B-5. C-130 Aircraft Marking Specification

## TO 1-1-4

*C-135 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-6)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S AIR FORCE	Both sides of fuselage	Letters 30 inch high	15044
B Model Designation, Acft S/N and fuel Requirements	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage		Background, border - 15044, Stars and Bars -17875, Stripes - 11136
D	On under surface of right wing and top surface of left wing	50 inch star	
E USAF	Top surface of right wing and under surface of left wing	55 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	18 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
H Anti-Glare	Top of fuselage in front cockpit		37038

*C-135 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	17178	MIL-C-83151	16473	MIL-C-83286
Battery Compartment	17038	MIL-C-7439, Class I	16473	MIL-C-83286
Landing Gear	17178		17875	MIL-C-83286
Wheel Wells	YELLOW	MIL-P-8585	16473	MIL-C-83286
Flap wells	YELLOW	MIL-P-8585	16473	MIL-C-83286
Radome	17038	MIL-C-7439, Class II	17038	MIL-C-83231, Type II
Relief Tube Areas			16473	MIL-C-83286
Walkways				
Engine Exhaust Path			16473	MIL-C-83286
White Caps as Required			17875	MIL-C-83286
Lower Fuselage				
APU Exhaust Paths			16473	MIL-C-83286
Heater Exhaust Path			16473	MIL-C-83286
Plastic Parts			17038	MIL-C-83231, Type II

NOTE: Special Purpose C-135 Aircraft may be painted with color No. 16473.

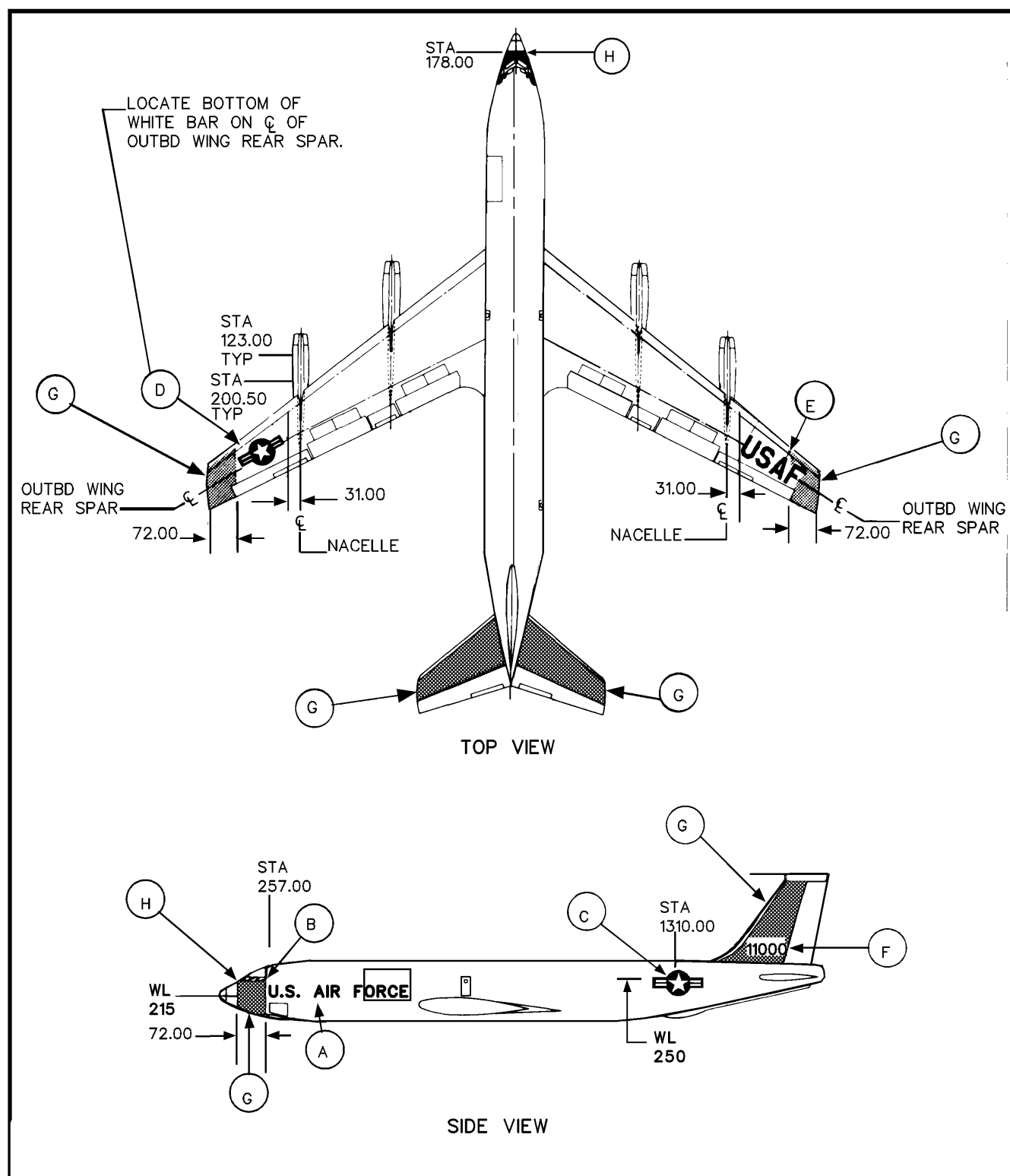


Figure B-6. C-135 Aircraft Marking Specification

## TO 1-1-4

## C-141 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-7)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 21 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage		Background, border - 15044, Stars and Bars - 17875, Stripes - 11136
D	On under surface of right wing and top surface of left wing	50 inch star	
E USAF	Top surface of right wing and under surface of left wing	50 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	18 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
H Walkway Border		2 inches wide	17038
Anti-Glare	N/A		37038

## C-141 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	17178	MIL-L-19537	16473	MIL-C-83286
Battery Compartment	16473	MIL-E-15936	16473	MIL-C-83286
Landing Gear	17875	MIL-C-27227	17875	MIL-C-83286*
Wheel Wells	17875	Corrogard 25	16473	MIL-C-83286
Leading Edges	BARE	BARE	16473	MIL-C-83286
Flap Wells	17178	MIL-L-19537	16473	MIL-C-83286
Radome	17038	MIL-L-7439, Class I	17038	MIL-C-83231, Type II
Relief Tube Areas	17178	Corrogard	16473	MIL-C-83286
Walkways				MIL-W-5044 Type I
Engine Exhaust Path				
JJ White Caps as Required	17875	MIL-L-19537	17875	MIL-C-83286
Lower Fuselage				
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				
Engine Ring Cowl			BARE	BARE
Lighting Deflectors			BARE	BARE
Doppler Antenna Covers			BARE	BARE
Wing Ram Air Scoops			BLACK	MIL-C-83231, Type II

\*See applicable 4S Series technical orders for appropriate finish and/or materials.



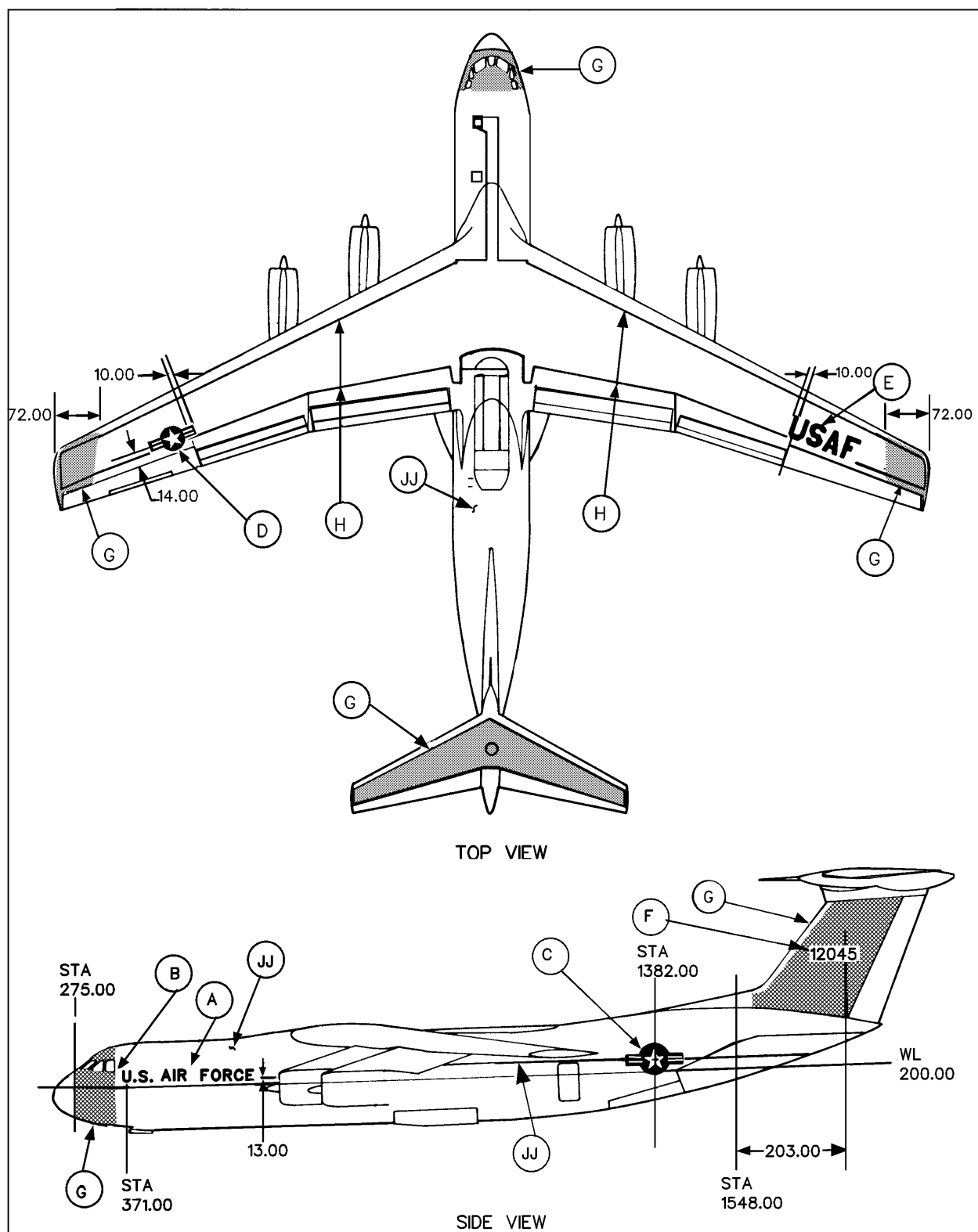


Figure B-7. C-141 Aircraft Marking Specification

## TO 1-1-4

*F-4 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-8)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 12 inch high	15044
B Model Designation, Acft S/N and fuel Requirements	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	30 inch star	Background, border - 15044, Stars and Bars - 17875, Stripes 11136
D	On under surface of right wing and top surface of left wing	45 inch star	
E USAF	Top surface of right wing and under surface of left wing	25 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	12 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
H Anti Glare	Top of fuselage in front of cockpit		37038

*F-4 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2 PAGE B-1)*

Area	Color No.	FORMER SYSTEM System	Color No.	STANDARD SYSTEM System
All exterior areas except as specified				MIL-C-83286
Battery Compartment			17875	MIL-C-83286
Landing Gear Struts				See TO 4S-1-182
Wheel Wells				MIL-C-83286
Flap Wells			17875	MIL-C-83286
Radome				See TO IF-4C-3-1-6
Relief Tube Area				
Walkways				See TO IF-4C-3-1-6
Engine Exhaust Path				
White Caps as Required				
Lower Fuselage				
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				See TO 1F-4C-3-1-6
Landing Wheels				See TO 4W-1-61
Main Landing Gear Actuator				See TO 9H2-74-3
Nose Landing Gear Actuator				See TO 4SA6-20-3

\* The basic color is white, color 17875, for all aircraft assigned to Edwards AFB, California and those aircraft assigned to the engineering department at Hill AFB, Utah only.

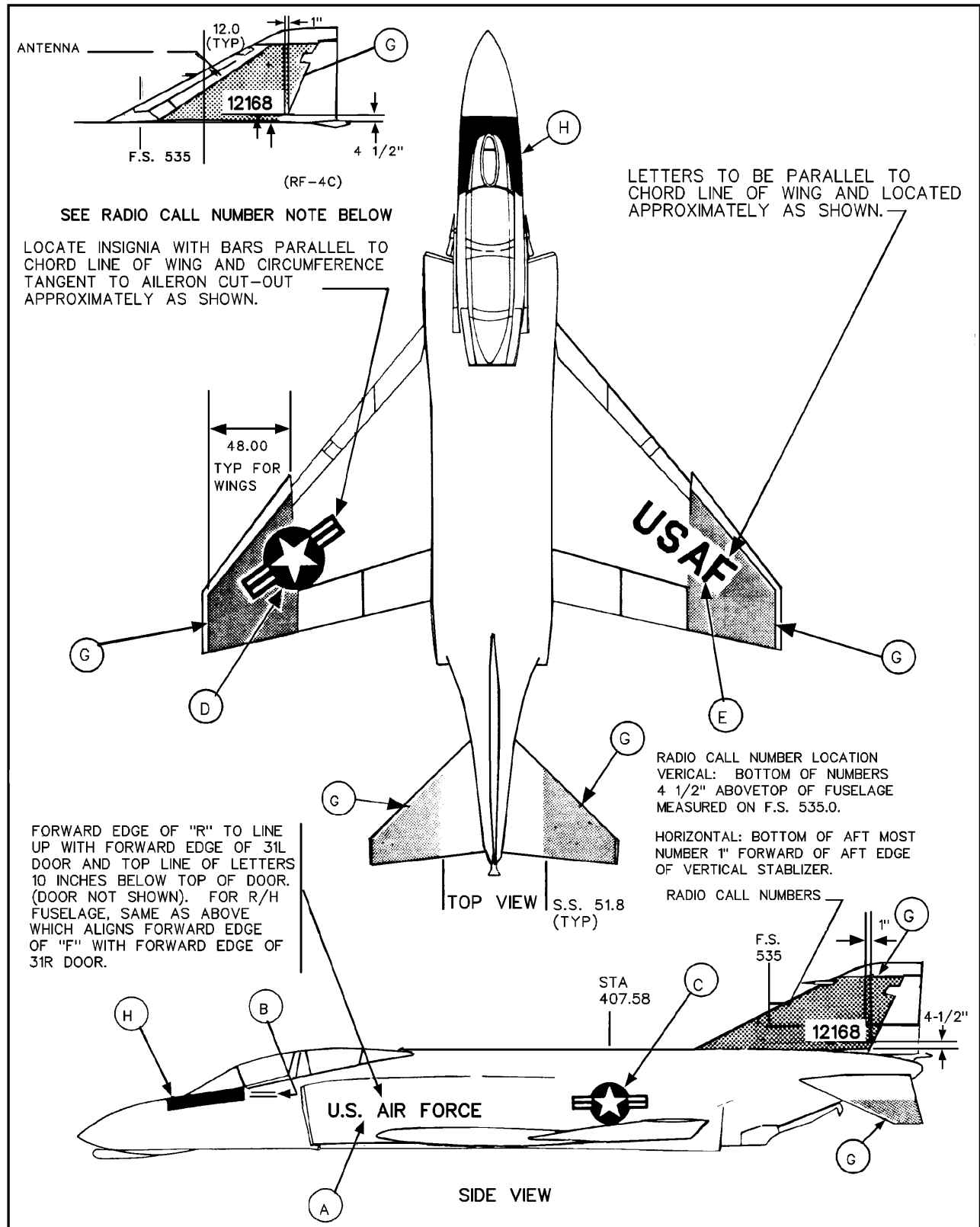


Figure B-8. F-4 Aircraft Marking Specification

## TO 1-1-4

*F-106 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-9)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 21 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	30 inch star	Background, Border - 15044, Stars and Bars -17875, Stripes -11136
D	On under surface of right wing and top surface of left wing	40 inch star	
E USAF	Top surface of right wing and under surface of left wing	30 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	12 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
H Anti-Glare	Top of fuselage in front of cockpit		37038

*F-106 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)*

Area	Color No.	FORMER SYSTEM	Color No.	STANDARD SYSTEM
		System		System
All exterior areas except as specified	16473	MIL-L-19537	16473	MIL-C-83286
Battery Compartment		MIL-C-7439 Class I	16473	MIL-C-83286
Landing Gear	17178	MIL-L-19537	17875	MIL-C-83286
Wheel Wells	YELLOW	MIL-P-8585	16473	MIL-C-83286
Flaps Wells				
Radome	17038	MIL-C-7439, Class I	17038	MIL-C-83231, Type II
Relief Tube Areas				
Walkways				
Engine Exhaust Path				
White Caps as Required				
Lower Fuselage				
APU Exhaust Paths			16473	MIL-C-83286
Heater Exhaust Path			16473	MIL-C-83286
Plastic Parts			17038	MIL-C-83231, Type II

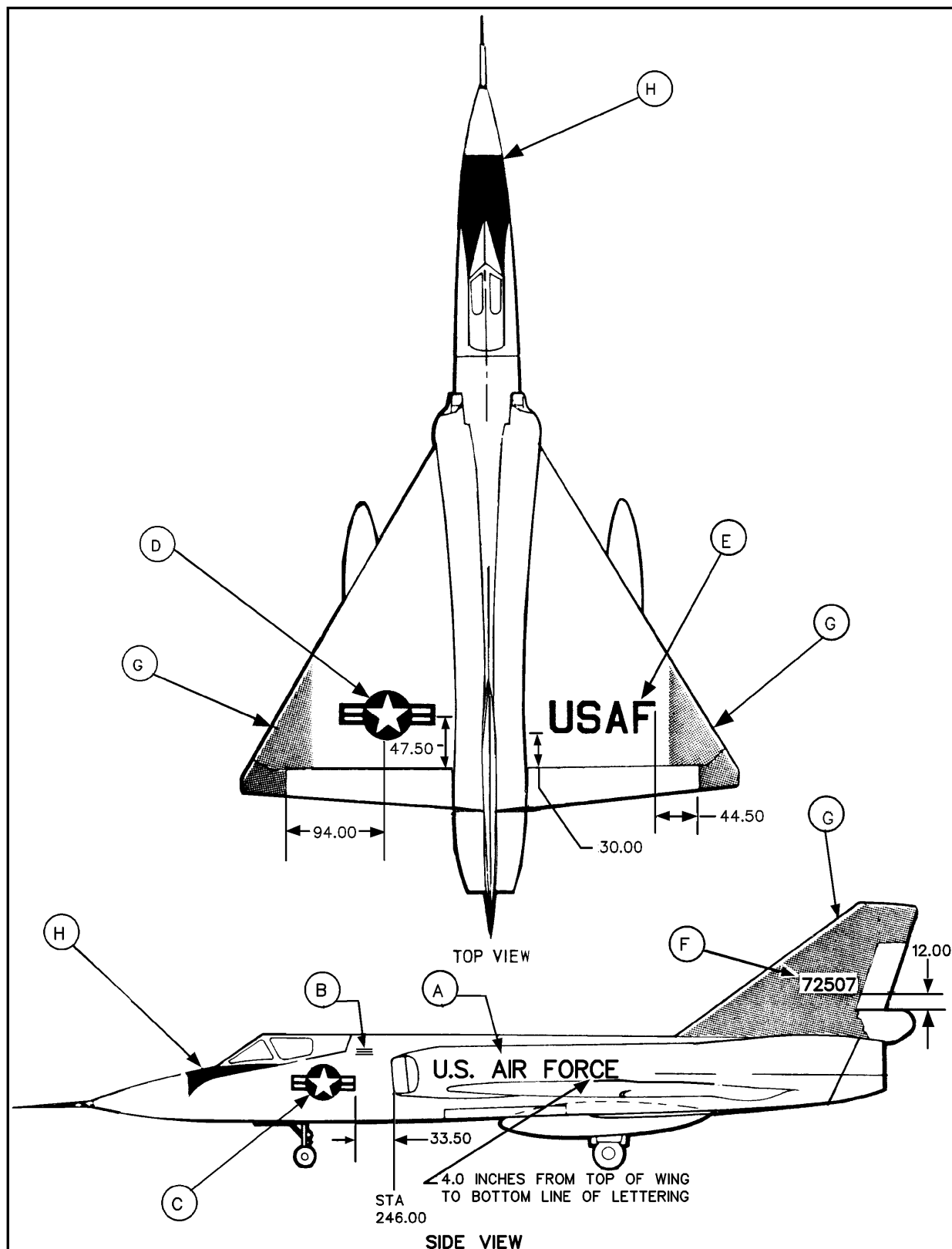


Figure B-9. F-106 Aircraft Marking Specification

## TO 1-1-4

*H-1 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-10)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 6 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	16 inch star	Background, border - 15044, Stars and Bars -17875, Stripes -11136
D	Located on underside of fuselage		
E	On upper surface of fuselage		
F Call Numbers	Both sides of tailboom	6 inch high numbers	17038
G Anti-Glare	Top of fuselage in front of cockpit		37038
H Walkway Border	Top of fuselage	2 inches wide	17038
I Arctic Markings	N/A		12197
J Rotor Warning	Both sides of fuselage	2 inch high letters	See Para 6-13 and Figure E-5

*H-1 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	15045	MIL-L-19537	16473	MIL-C-83286
Battery Compartment	17038	MIL-C-7439, Class I	16473	MIL-C-83286
Landing Gear	15045	MIL-L-19537	16473	MIL-C-83286
Wheel Wells				
Flap Wells				
Radome			17038	MIL-C-83231, Type II
Relief Tube Areas			16473	MIL-C-83286
HH Walkways				MIL-W-5044, Type I
Engine Exhaust Path			16473	MIL-C-83286
White Caps as Required			17875	MIL-C-83286
Lower Fuselage				
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts			17038	MIL-C-83231, Type II
Upper Fuselage	17875	MIL-L-19537	16473	MIL-C-83286
*PP Top surface of main rotor blade	34087	MIL-L-81352	37038	MIL-C-83286
*QQ Bottom surface of main rotor blade	37038	MIL-L-81352	37038	MIL-C-83286
*Tail Rotor Blades			37038	MIL-C-83286

\*Rotor blade painting at maintenance level is limited to touch-up of minor repairs.

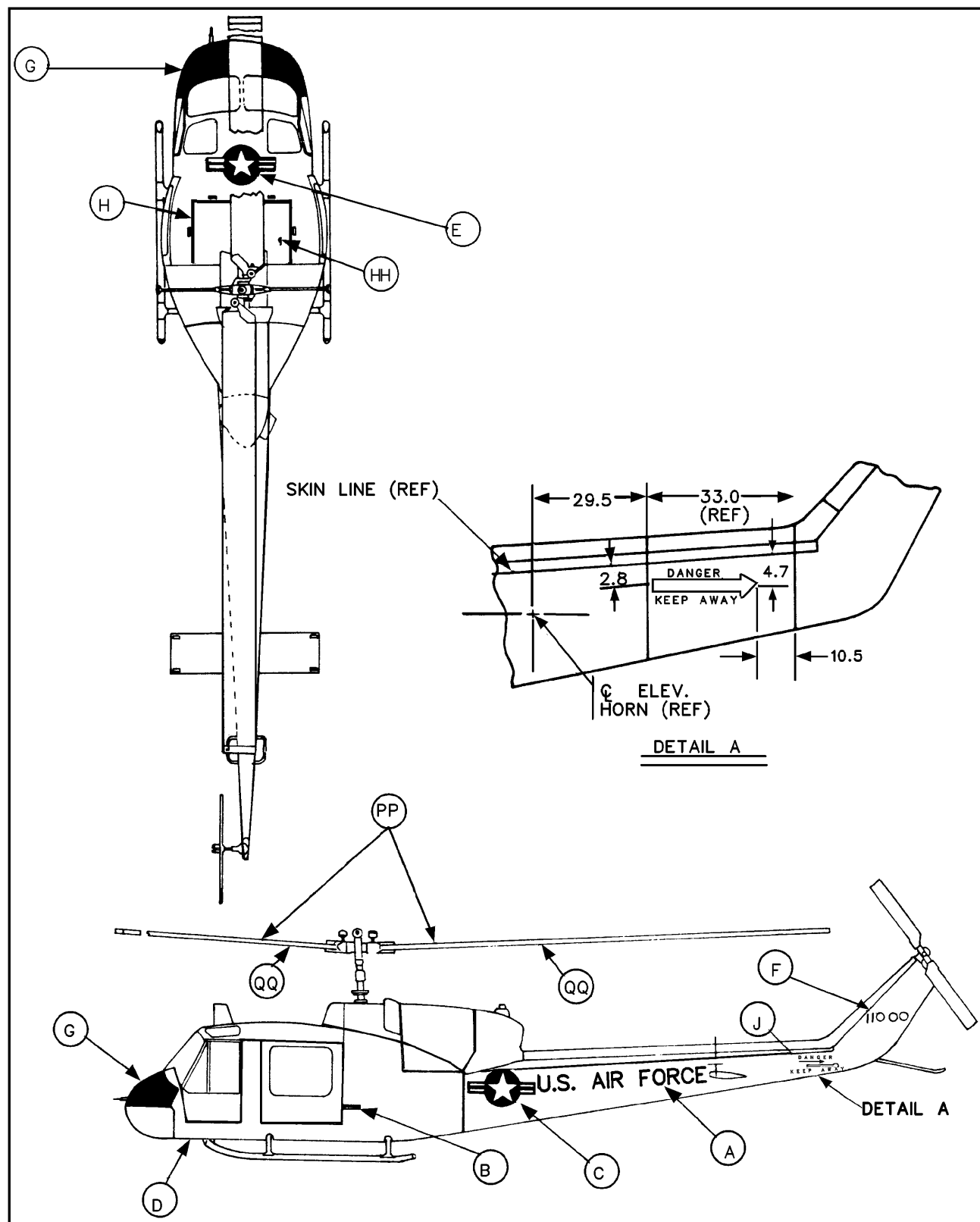


Figure B-10. H-1 Aircraft Marking Specification



## TO 1-1-4

*H-3 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-11)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 12 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	30 inch star	Background, border - 15044, Stars and Bars - 17875, Stripes -11136
D	Located on underside of helicopter		
E	On upper surface of horizontal fin	25 inch star	
F Call Numbers	Both sides-of fuselage	8 inch high numbers	17038
G Arctic- Markings			12197
H Anti-Glare	Top of fuselage in front of cockpit		37038
I Walkway Border	Top of fuselage and wing stub	2 inches wide	17038

*H-3 AIRCRAFT MARKING SPECIFICATION (SEE NOTE 2, PAGE B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	17178	MIL-L-19537	16473	MIL-C-83286
Battery Compartment	17038	MIL-C-7439, Class I	16473	MIL-C-83286
Landing Gear	17178	MIL-C-19537	16473	MIL-C-83286
Wheel Wells	17178	MIL-L-19537	16473	MIL-C-83286
Flap Wells				
Radome				
Relief Tube Areas	17038	MIL-C-7439, Class I	16473	MIL-C-83286
HH Walkways		MIL-W-5044, Type II or III as required.		MIL-W-5044, Type I
II Engine Exhaust Path	17038	MIL-C-22750	16473	MIL-C-83286
White Caps as Required				
Lower Fuselage				
APU Exhaust Paths			16473	MIL-C-83286
Heater Exhaust Path			16473	MIL-C-83286
Plastic Parts			17038	MIL-C-83231, Type II
Main and Tall Rotor Blades			37038	MIL-C-83286

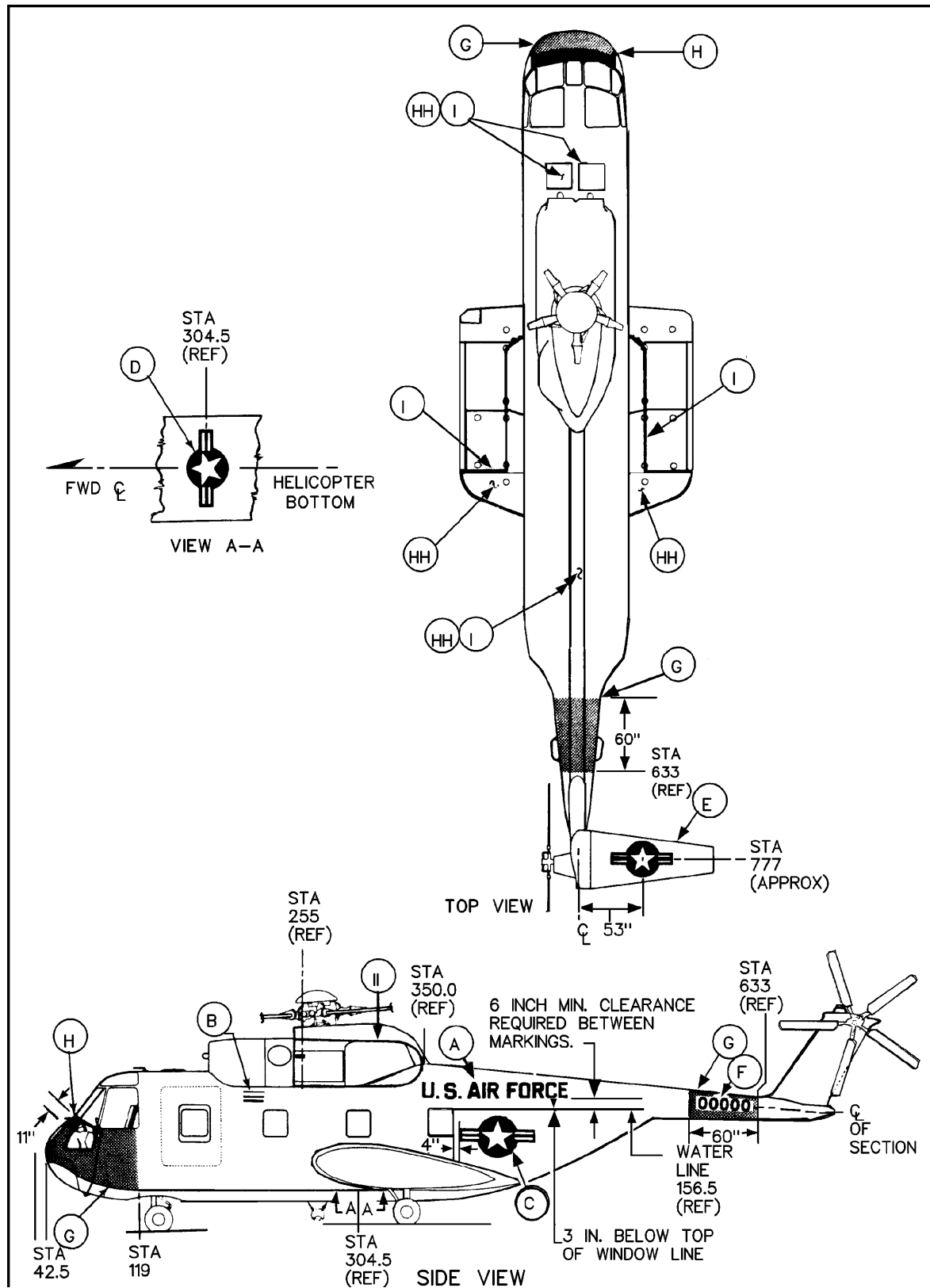


Figure B-11. H-3 Aircraft Marking Specification

## TO 1-1-4

*H3B AIRCRAFT MARKING SPECIFICATION (SEE FIG B-12)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letter 12 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star D	Both sides of fuselage Located on under side of helicopter	30 inch star 30 inch star	Background, border - 15044, Stars and Bars -17975, Stripes -11136
E	On upper surface of horizontal fin	25 inch star	
F Call Numbers	Both sides of fuselage	9 inch high numbers	17038
G Arctic Markings			12197
H Anti-Glare	Top of fuselage in front of cockpit		37038
J Rotor Blades	Main and Tail		See Para 4-8/4-9

*H3B AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	17178	MIL-L-19537	16473	MIL-C-83286
Battery Compartment	17038	MIL-C-7439, Class I	16473	MIL-C-83286
Landing Gear	17178	MIL-L-19537	16473	MIL-C-83286
Wheel Wells	17178	MIL-L-19537	16473	MIL-C-83286
Flap Wells				
Radome				
Relief Tube Areas	17038	MIL-C-7439, Class I	16473	MIL-C-83286
II Engine Exhaust Path	17038	MIL-C-22750	16473	MIL-C-83286
White Caps as Required				
Lower Fuselage				
APU Exhaust Paths			16473	MIL-C-83286
Heater Exhaust Path			16473	MIL-C-83286
Plastic Parts			17038	
Main and Tail Rotor Blades			37038	MIL-C-83286

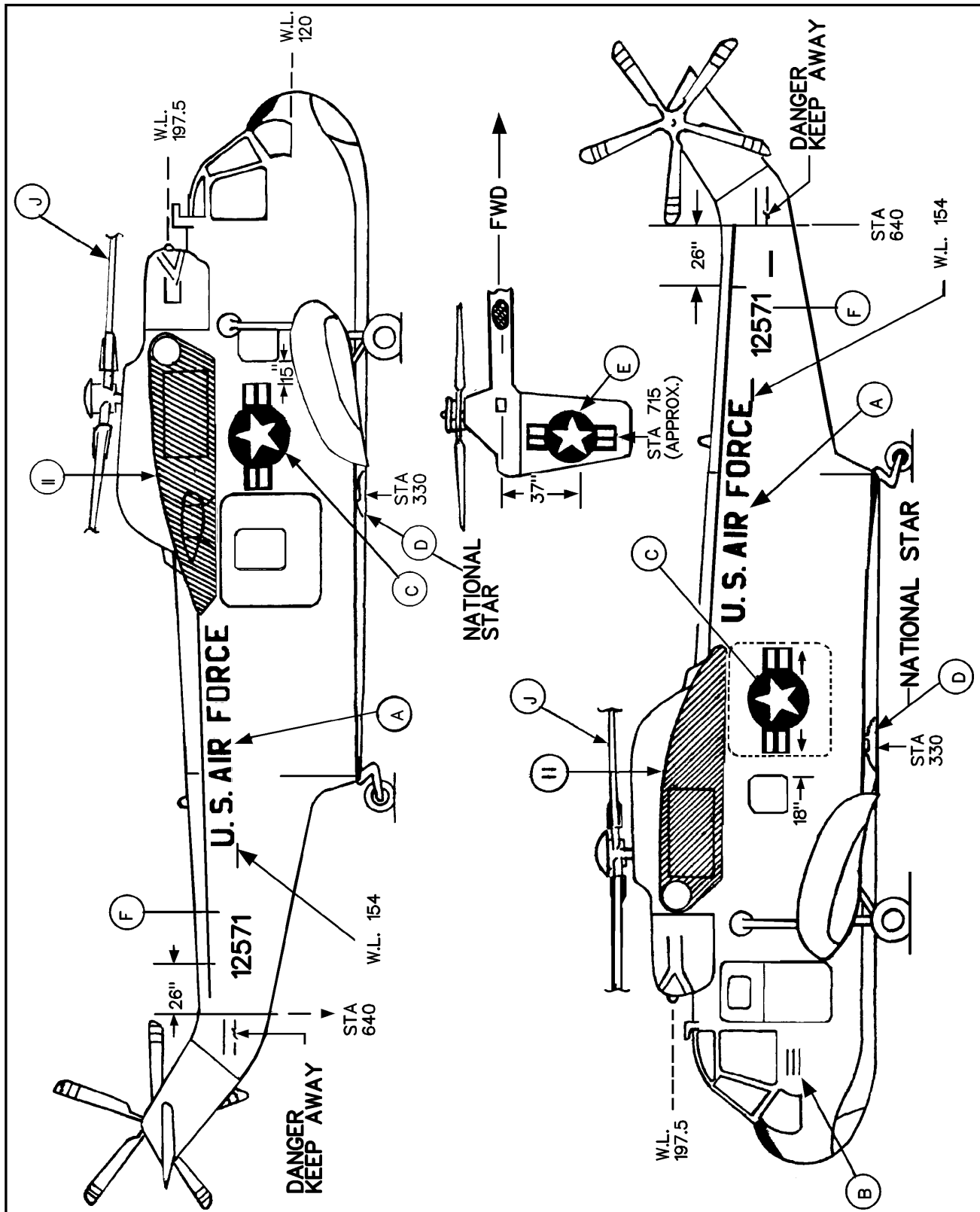


Figure B-12. H-3B Aircraft Marking Specification

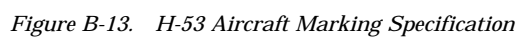
## TO 1-1-4

*H-53 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-13)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letter 12 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	30 inch star	Background, border - 15044, Stars and Bars 17975, Stripes 11136
D	Located on under side of helicopter	30 inch star	
E	On upper surface of horizontal fin	30 inch star	
F Call Numbers	Both sides of fuselage	8 inch high numbers	17038
G Arctic Markings			12197
H Anti-Glare	Top of fuselage in front of cockpit		37038
J Rotor Blades	Main and Tail		See Para 4-11/4-12
K Rotor Warning	Both sides of fuselage	2 inch high letters	See Para 6-13 and Figure E-5

*H-53 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified			16473	MIL-C-83286
Battery Compartment			16473	MIL-C-83286
Landing Gear			16473	MIL-C-83286
Wheel Wells			16473	MIL-C-83286
Flap Wells				
Radome				
Relief Tube Areas			16473	MIL-C-83286
II Engine Exhaust Path			16473	MIL-C-83286
White Caps as Required				
Lower Fuselage				
APU Exhaust Paths			16473	MIL-C-83286
Heater Exhaust Path			16473	MIL-C-83286
Plastic Parts			17038	MIL-C-83231, Type II
Main and Tail Rotor Blades			37038	MIL-C-83286



## TO 1-1-4

## OV-10 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-14)

## (FAC CONFIGURATION)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
<b>A U.S. AIR FORCE</b>			
<b>B Model Designation, Acft S/N and fuel Requirement</b>	Left side of fuselage	Letters and numbers 1 inch high	27038
<b>C National Star</b>	Both sides of fuselage	10 inch star	Background, border - 25044, Stars and Bars -27875, Stripes -21136
<b>D</b>	On under surface of right wing and top surface of left wing		
<b>E USAF</b>	Both sides of vertical stabilizer or fin	6 inch high letters	25044
<b>F Call Numbers</b>	Both sides of vertical stabilizer	6 inch high numbers	27038
<b>Arctic Markings</b>			
<b>G Walkway Border</b>	Top of wing	2 inches wide	36440
<b>Anti- Glare</b>			
<b>H Propeller Tip</b>	On both sides	*(See note below)	*
<b>I Propeller Caution Band</b>	On fuselage through same plane of propeller travel	3 inches wide	Band Arrows Danger 21136 Propeller 27875

## OV-10 AIRCRAFT EXTERIOR FINISHING SYSTEM (FAC CONFIGURATION) (SEE NOTE 2, PAGE B-1)

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified			36473	MIL-C-83286
Battery Compartment				
Landing Gear			17875	MIL-C-83286
Wheel Wells			17875	MIL-C-83286
Flap & Spoiler Surfaces Exposed only when Extended			21136	MIL-C-83286
Radome				
Relief Tube Areas				
AA Walkways				MIL-W-5044, Type I
Engine Exhaust Path				
White Caps as Required				
Lower Fuselage				
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				
BB Top of Wing, Entire Upper Surface (Includes fuselage & nacelles in Planform of wing)			37875	MIL-C-83286

\*Starting at prop tip, apply a 2" coat of white, color No. 17875, MIL-L-19537, NSN 8010-00-527-2507. Follow by a 4" coat of red, color No. 11136, MIL-L-19537, NSN 8010-00-551-7932, followed by a 2" coat of white, color No. 17875.



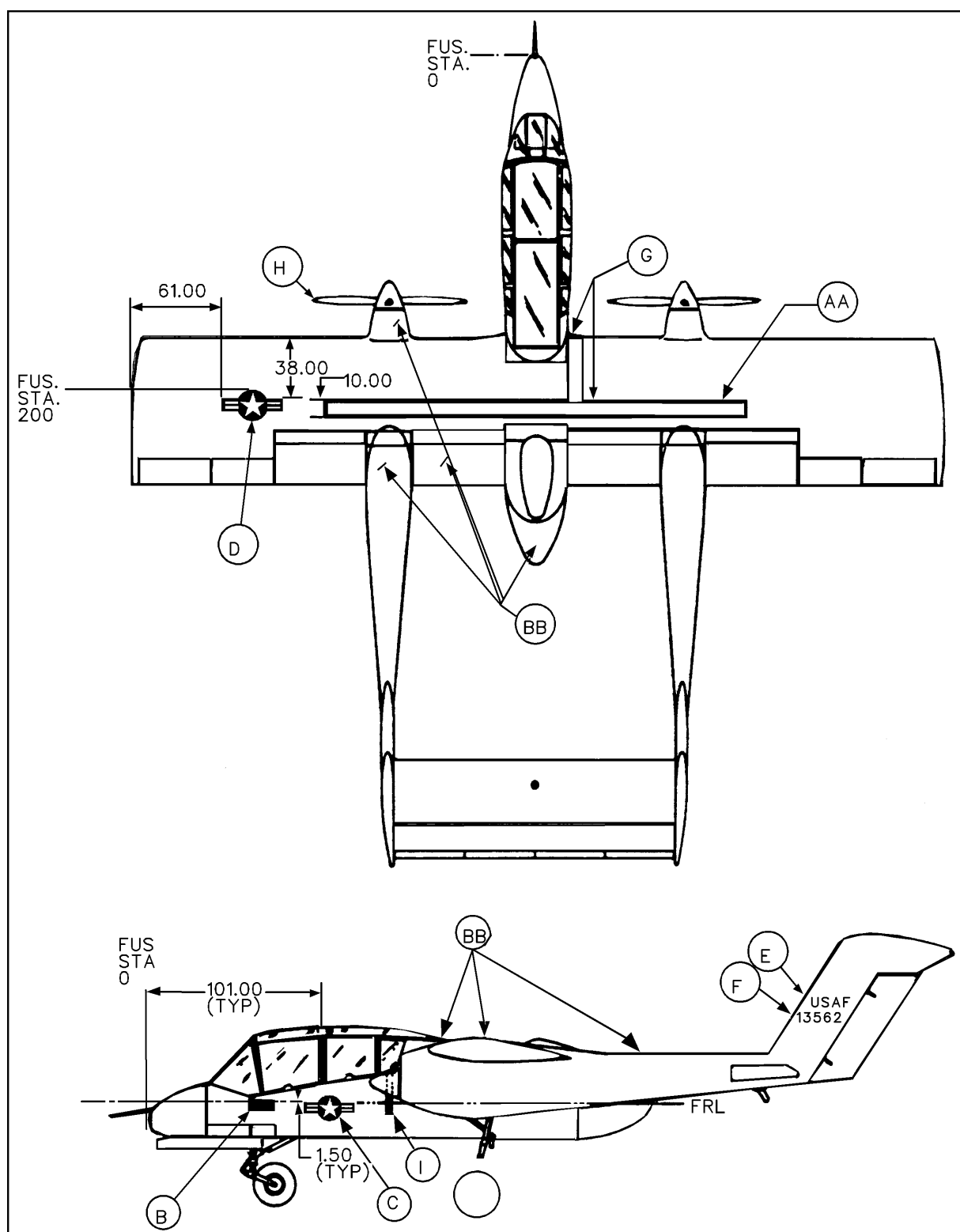


Figure B-14. OV-10 Aircraft Marking Specification (FAC Configuration)

## TO 1-1-4

## T-1A AIRCRAFT MARKING SPECIFICATION (SEE FIG B-15)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A. U.S. AIR FORCE	Both sides of fuselage	11 inch high letters	15044
B. Fuselage Separation Line	Both sides of fuselage from nose to tailcone, beginning at FS 0.0, tapered to 4.4 inches at aft cabin window centerline, tapered to 2.0 inches at tailcone.	2.0 inch wide at nose to 4.4 inch below aft cabin window to 2.0 inch wide at tail cone	15044
C. National Star	Outboard side of both engine nacelles	15 inch star	Background, border - 15044, Stars and Bars - 17925, Stripes - 11136
D.	On under surface of right wing and top surface of left wing	20 inch star	
E. USAF	Top surface of right wing and under surface of left wing	20 inch high letters	15044
F. Call Numbers	Both sides of vertical stabilizer	12 inch high numbers	17038
G. Anti-Glare	Top fuselage forward of flight deck and around flight deck side windows		37038
H. Model Designation, Acft S/N and fuel Requirement	Single point refueling	Letters and numbers 5/8 inch high	15044

## T-1A AIRCRAFT EXTERIOR FINISHING SYSTEM

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified			17925	MIL-C-83286
Battery Fixture			NOTE A	
Landing Gear			NOTE A	
Wheel Wells			NOTE A	
Flap Wells			NOTE B	
Flaps			NOTE C	
Radome			NOTE D	
Engine Exhaust Path				
Lower Fuselage				
APU Exhaust Paths				
Plastic Parts				
Vertical Stabilizer Tip				
Elevator Heater Mat			NOTE E	

NOTE A: All exposed areas, including cove areas, will be painted Matterhorn White. Part number for topcoat is 22-11353 manufactured by Sterling Lacquer Mfg. Co. or 560-025 White manufactured by Pratt and Lambert Co.

NOTE B: Flap cove area will be painted with one coat of aluminum epoxy, part number 22-11202 manufactured by Pratt and Lambert Co.

NOTE C: Portions of the flap that retract under the wing will receive a gray teflon coating, part number 23T1 -100 manufactured by Crown Metro, Inc.

NOTE D: No Anti-Static coating shall be applied to radome. Cosmetic touch-up of primer and topcoat only is authorized.

NOTE E: Erosion coating, black conductive. Midland Division, Dexter Corp. Hayward CA. Laminar X500, 8B6 CAGE Code 98795.

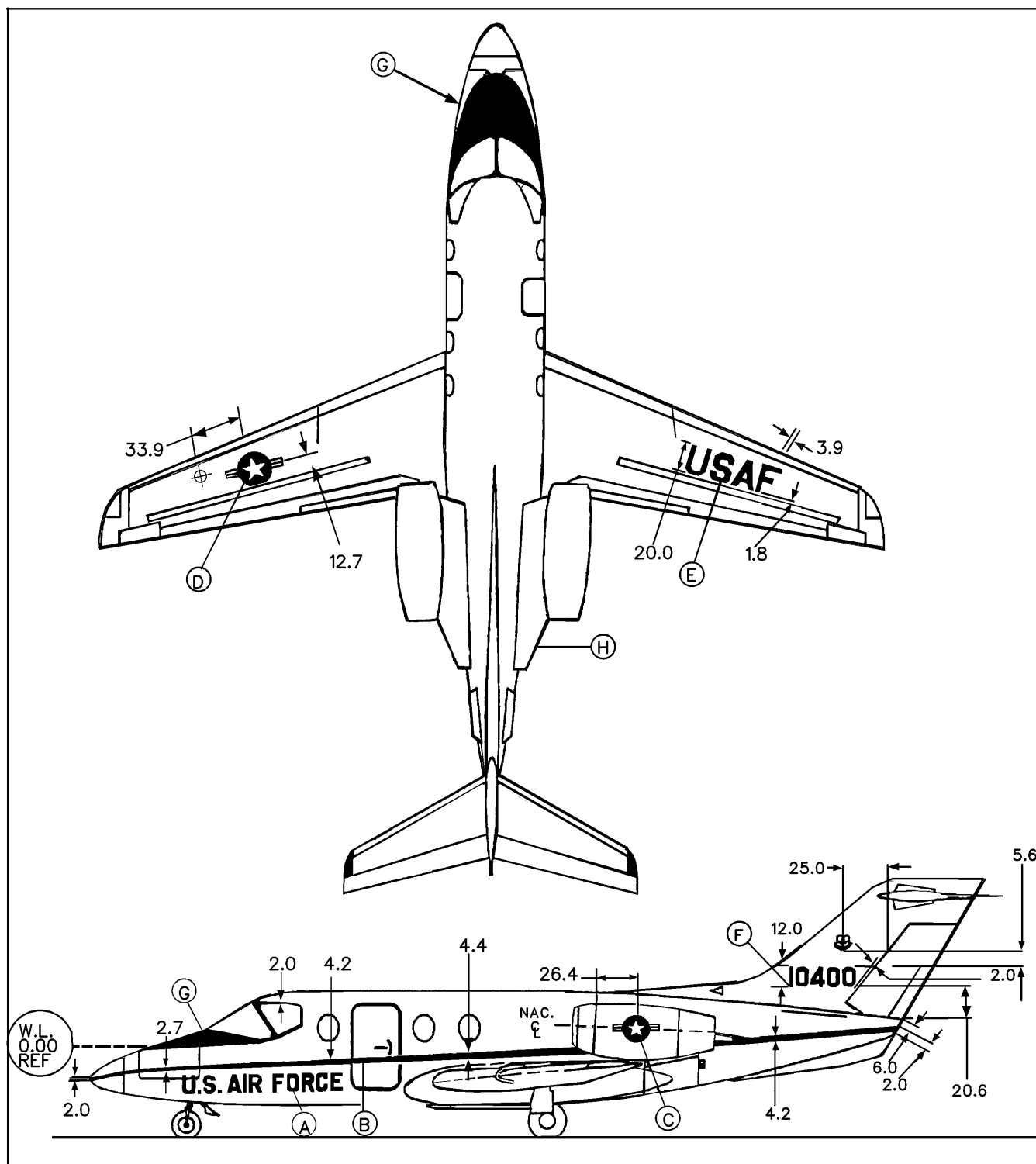


Figure B-15. T-1A Aircraft Marking Specification

## TO 1-1-4

## T-33 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-16)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 12 inch high	15044
B Model Designation, Acft S/N and fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	25 inch star	Background border - 15044, Stars and Bars -17875, Stripes -11136
D	On under surface of right wing and top surface of left wing	30 inch star	
E USAF	Top surface of right wing and under surface of left wing	30 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	8 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
H Anti-Glare	Top of fuselage in front of cockpit window and on inner 180 degrees of tip pods		37038
I Anti-Skid	Both sides of upper wing roots	12 inch wide parallel with fuselage	37038

## T-33 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	NOT PAINTED	MIL-L-19537	16473	MIL-C-83286
Battery Compartment	17038	TT-L-54	16473	MIL-C-83286
Landing Gear	17178	MIL-L-19538	17875	MIL-C-83286
Wheel Wells	34151	MIL-P-8585	16473	MIL-C-83286
Flap Wells	34151	MIL-P-8585	16473	MIL-C-83286
Radome			17038	MIL-C-83231, Type II
Relief Tube Areas			16473	MIL-C-83286
Walkways			37038	MIL-W-5044, Type I
Engine Exhaust Path			16473	MIL-C-83286
White Caps as Required			17875	MIL-C-83286
KK Lower Fuselage	16473	MIL-L-19537	16473	MIL-C-83286
APU Exhaust Paths			16473	MIL-C-83286
Heater Exhaust Path			16473	MIL-C-83286
Plastic Parts			17038	MIL-C-83231, Type II
PP Top Wing Surface	16473	MIL-L-19537	16473	MIL-C-83286

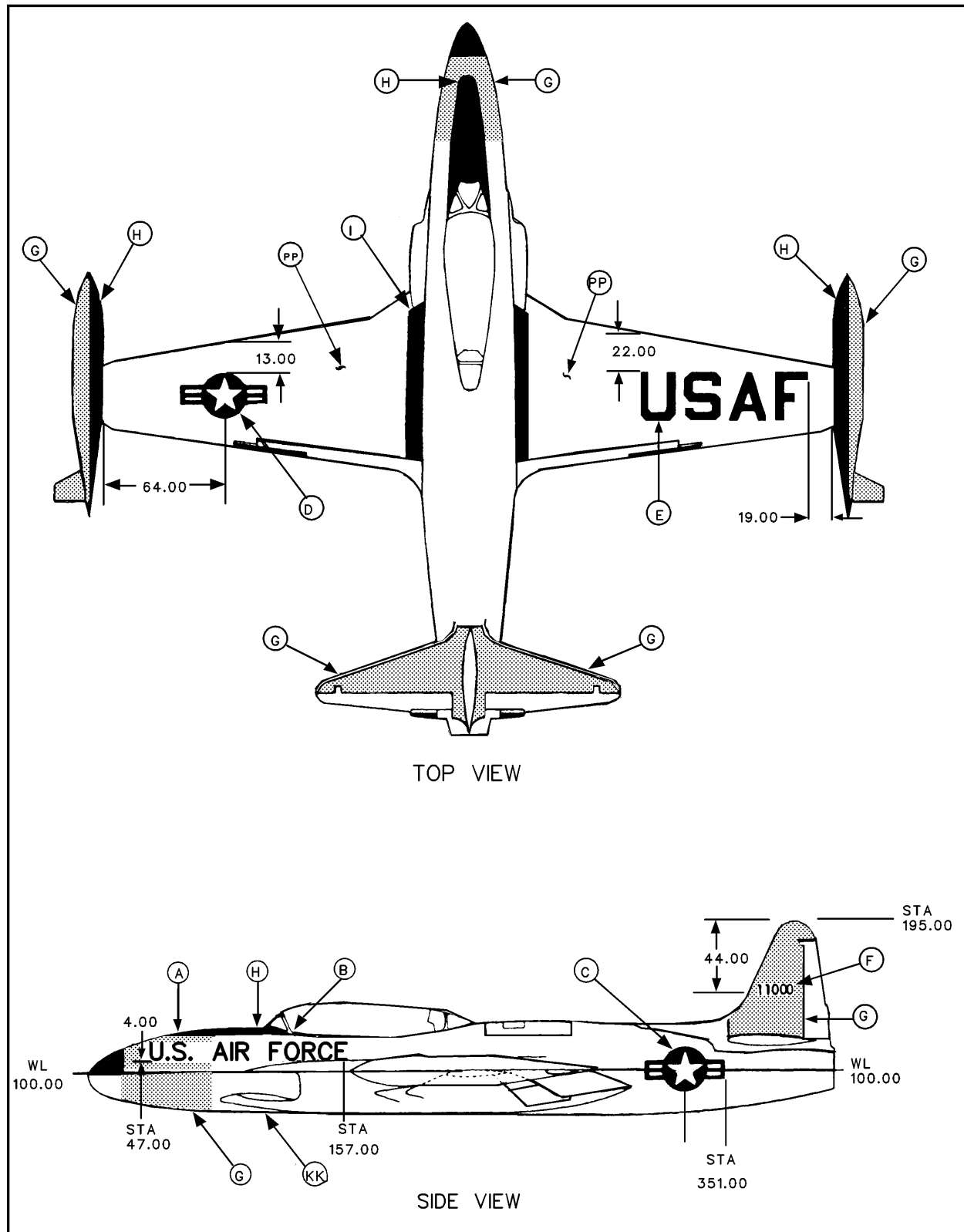


Figure B-16. T-33 Aircraft Marking Specification

## TO 1-1-4

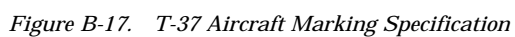
## T-37 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-17)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 6 inch high	17925
B Model Designation, Acft S/N Fuel Requirement	Single point refueling	Characters 3/8 inch Characters 3/8 inch Characters 1/4 inch	17925 White on blue
C National Star	Both sides of fuselage	15 inch star	Background, border - 15044, Stars and Bars - 17925, Stripes - 11136
D	On under surface of right wing and top surface of left wing	30 inch star	
E USAF	Top surface of right wing and under sur- face of left wing	30 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	6 inch high numbers	17925
H Anti-Glare	Top of fuselage in front of cockpit		35044
I Walkway Border	Top of wings	2 inches wide	15044
J Cockpit Access Step Door	Both sides of fuselage just forward of wing leading edge	Entire door	15044

## T-37 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)

Area	STANDARD SYSTEM	
	Color No.	System

All exterior areas except as specified	TOP FUSELAGE 17925 BOTTOM FUSELAGE 15044	MIL-C-83286
Battery Compartment	17925	MIL-C-83286
Landing Gear	17925	MIL-C-83286
Wheel Wells	17925	MIL-C-83286
Flap Wells	15044	MIL-C-83286
Radome		
Relief Tube Areas		
HH Walkways		MIL-W-5044, Type I
Engine Exhaust Path	15044	MIL-C-83286
White Caps as Required	17925	MIL-C-83286
Lower Fuselage	15044	
APU Exhaust Paths		
Heater Exhaust Path		
Plastic Parts		





## TO 1-1-4

## T-38 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-18)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 12 inch high	15044
B Model Designation, Acft S/N Fuel Requirement	Single point refueling	Characters 5/8 inch Characters 5/8 inch Characters 3/8 inch	15044 Blue on white
C National Star	Both sides of fuselage	20 inch star	Background, border - 15044, Stars and Bars - 17875, Stripes - 11136
D	On under surface of right wing and top surface of left wing	20 inch star	
E USAF	Top surface of right wing and under surface of left wing	22.5 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer	12 inch high numbers	15044
G Arctic Markings  (Not Authorized for ATC Aircraft)	One inch clearance around all large insignia and lettering		12197
H Anti-Glare	Top of fuselage in front of cockpit		37038

## T-38 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)

Area	STANDARD SYSTEM	
	Color No.	System
All exterior areas except as specified	17875	MIL-C-83286
Battery Compartment	17875	MIL-C-83286
Landing Gear	17875	MIL-C-83286
Wheel Wells	17875	MIL-C-83286
Flap Wells	17875	MIL-C-83286
Radome	17038	MIL-C-83231, Type II
Relief Tube Areas		
Walkways		
Engine Exhaust Path		
White Caps as Required		
Lower Fuselage		
APU Exhaust Paths		
Heater Exhaust Path		
Plastic Parts		
Leading Edge of Vertical Stabilizer	17875	MIL-C-83231, Type II
Inboard Ends of Vertical Stabilizer	17875	MIL-C-83286
Trailing Edge of Vertical Stabilizer	17875	MIL-C-83286

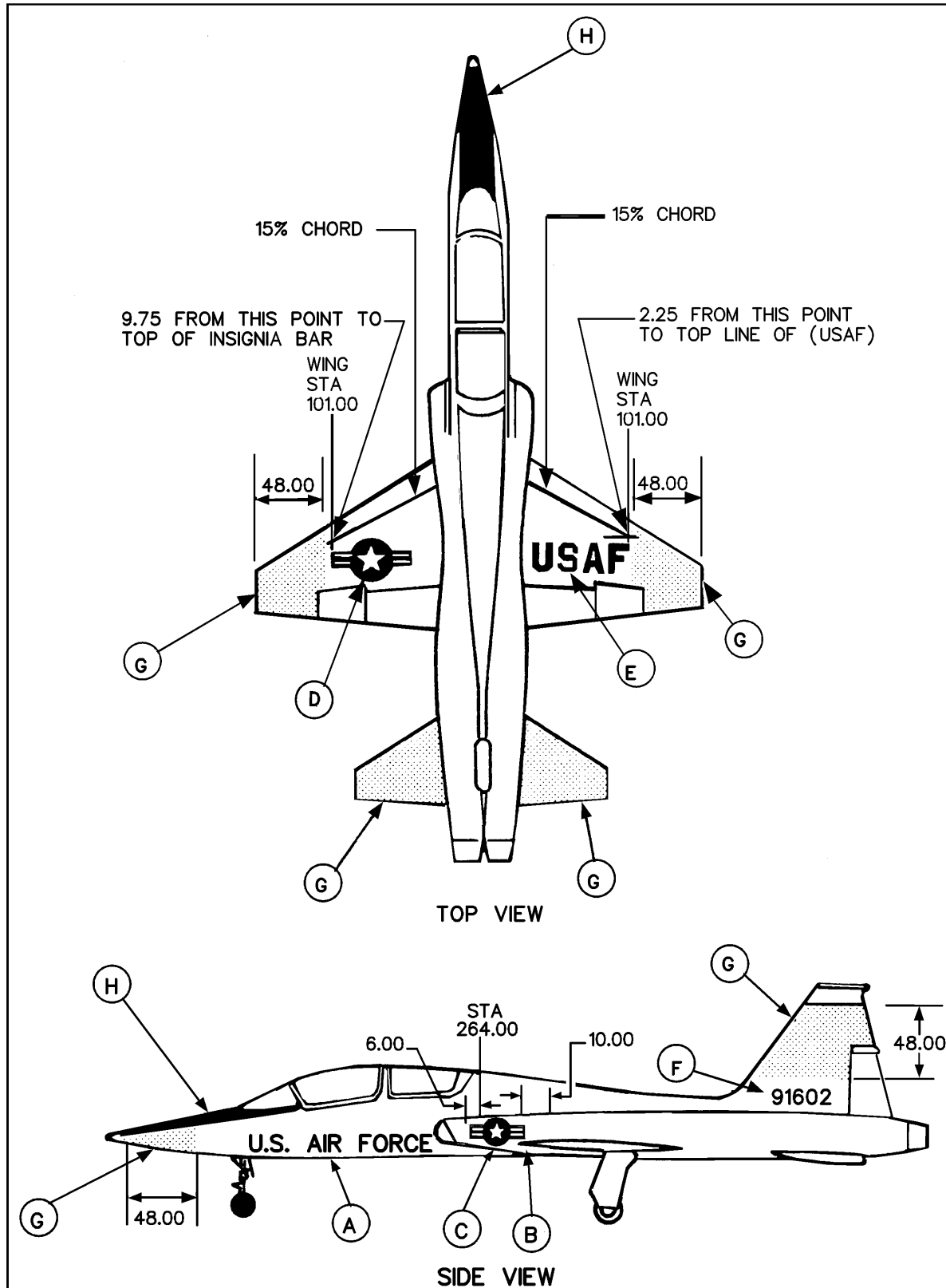


Figure B-18. T-38 Aircraft Marking Specification

## TO 1-1-4

## T-39 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-19)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A U.S. AIR FORCE	Both sides of fuselage	Letters 12 inch high	15044
B Model Designation, Acft S/N and Fuel Requirement	Left side of fuselage	Letters and numbers 1 inch high	17038
C National Star	Both sides of fuselage	20 inch star	Background, border - 15044, Stars and Bars - 17875, Stripes - 11136
D	On under surface of right wing and top surface of left wing	30 inch star	
E USAF	Top surface of right wing and under surface of left wing	30 inch high letters	15044
F Call Numbers	Both sides of vertical stabilizer rudder	12 inch high numbers	17038
G Arctic Markings	One inch clearance around all large insignia and lettering		12197
I Walkway Border	Top of wings and engine pylons	2 inches wide	37038

## T-39 AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2, PAGE B-1)

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified	17875	Jet Skin No. 171-W-562/ MIL-L-19537	16473	MIL-C-83286
Battery Compartment	17875	Ever Lube 13-511	17875	MIL-C-83286
Landing Gear	17178	MIL-P-19537	17875	MIL-C-83286
Wheel Wells	YELLOW	MIL-P-8585	17875	MIL-C-83286
Flap Wells	YELLOW	MIL-P-8585	16473	MIL-C-83286
Radome	17038	MIL-C-7439, Class II	17038	MIL-C-83231, Type II
Relief Tube Areas				
HH Walkways *	36440	MIL-W-5044 Type I	37038	MIL-W-5044, Type II
Engine Exhaust Path			16473	MIL-C-83286
JJ White Caps as Required			17875	MIL-C-83286
Lower Fuselage	17178	Jet Skin No. 171-A27/ MIL-L-19537	16473	MIL-C-83286
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				
Aileron Wells			16473	MIL-C-83286
Vertical Stabilizer Tip			17038	MIL-C-83231, Type II

\*Note: Apply Anti-skid coating to within 2" of engine nacelle.

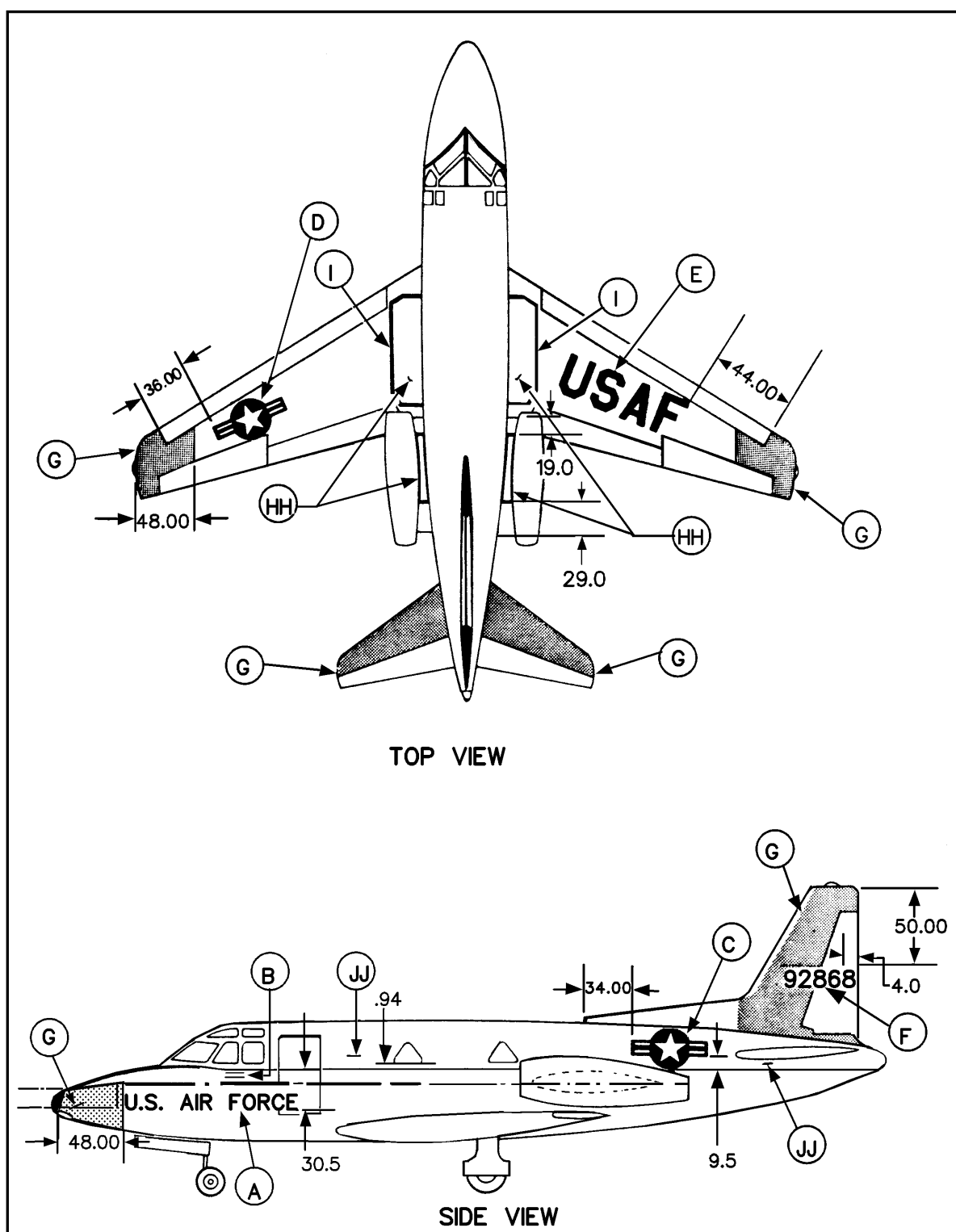


Figure B-19. T-39 Aircraft Marking Specification

## TO 1-1-4

## T-39 ALL WHITE AIRCRAFT MARKING SPECIFICATION (SEE FIG B-20)

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A UNITED STATES AIR FORCE	Both sides	Letters 6 inches high	15044
B National Star	Centered outb'd side of both engine nacelles. Nacelle Sta. 119.4	15 inch star	N/A
C Call Numbers	Both sides of vertical stabilizer rudder	8 inch high numbers	15044
D U.S. Flag	Centered both sides of vertical stabilizer, Sta. 59.8	11 inches	N/A
E Fuselage Separation line	Both sides of fuselage, beginning at Sta. 90.5 (tapered around crew compartment window) running horizontally to tail, 2 inches below fuselage windows	2 inches wide	15044
F Anti-Glare	Top fuselage forward of cockpit	Apply in accordance with AF Drawing 8123670	37038

## T-39 ALL WHITE AIRCRAFT EXTERIOR FINISHING SYSTEM (SEE NOTE 2 PAGE B-1)

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as Specified	17875	Jet Skin No. 171-W-562/MIL-L-19537	17875	MIL-C-83286
Battery Compartment	17875	Ever Lube 13-511	17875	MIL-C-83286
Landing Gear	17178	MIL-P-19537	17875	MIL-C-83286
Wheel Wells	YELLOW	MIL-P-8585	17875	MIL-C-83286
Flap Wells	YELLOW	MIL-P-8585	17875	MIL-C-83286
Radome	17038	MIL-C-7439, Class II	17038	MIL-C-83231, Type II
Relief Tube Areas				
HH Walkways	36440	MIL-W-5044, Type I	37038	MIL-W-5044, Type II
Engine Exhaust Path			17875	MIL-C-83286
JJ White Caps as Required			17875	MIL-C-83286
Lower Fuselage	17178	Jet Skin No. 171-A27/MIL-L-19537	17875	MIL-C-83286
APU Exhaust Paths				
Heater Exhaust Path				
Plastic Parts				
Aileron Wells			17875	MIL-C-83286
Vertical Stabilizer Tip			17875	MIL-C-83286

\* Note: Apply Anti-skid coating to within 2" of engine nacelle.

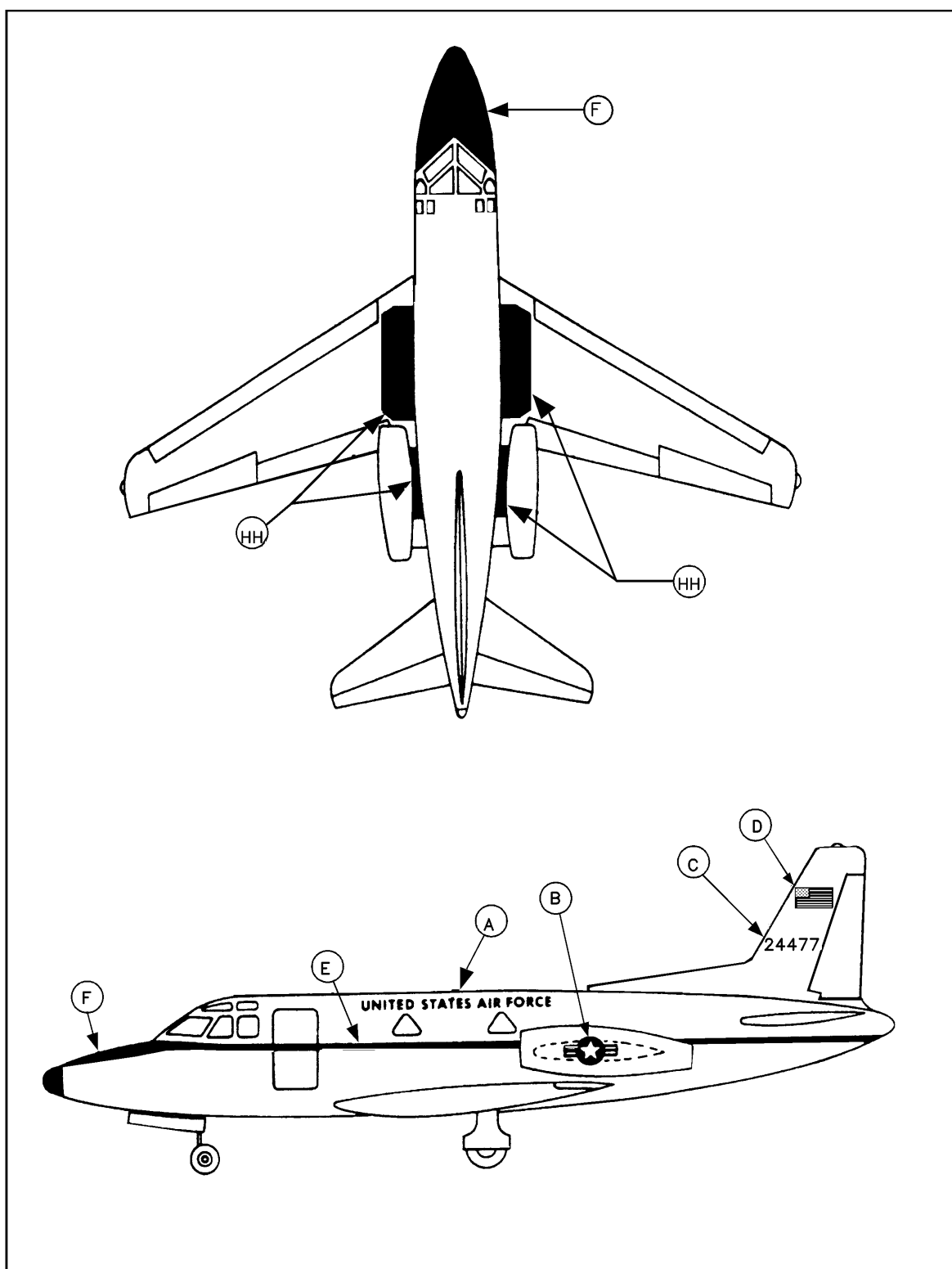


Figure B-20. T-39 All White Aircraft Marking Specification

## TO 1-1-4

*T-43 AIRCRAFT MARKING SPECIFICATION (SEE FIG B-21)*

1. MARKING	2. LOCATION	3. SIZE	4. COLOR NO/CODE
A. U.S. AIR FORCE	Both sides of fuselage	Letters 15 inch high	15044
B. Model Designation, Acft S/N (Data Legend)	Left side of fuselage	Letters and numbers 1 inch high	15044
C. National Star	Both sides of fuselage centered and 35 inches below center line of rear two windows	27 inch star, Back-ground Stars and Bars Stripes	15044 17925 11136
	On under surface of right wing and top surface of left wing	40 inch star with same color scheme as 27 inch star	
D. USAF	Top surface of right wing and under surface of left wing	30 inch high letters	15044
E. Call Numbers	Both sides of vertical stabilizer 2.0 inches above and 2.5 inches aft of the left and right elevator pitot probes	8.0 inch "AF" stacked over an 8.0 inch year model followed by 18 inch high aircraft tail numbers positioned parallel to the ground.	15044
F. Anti-Glare	Top of fuselage in front of cockpit wrapping around to station 179		BAC 701 37038
G. Fuselage Stripe	Both sides of fuselage 1 inch below windows	4 inch wide to tapered tail	15044
H. Distinctive Unit Aircraft Identification	Both sides of Vertical Stabilizer	30 inches high	15044
I. Command Emblem	Both sides of vertical stabilizer 24.0 inches aft of the L/E/ vertical stab. split line to the center line of the emblem.	4 inch wide to tapered tail	15044



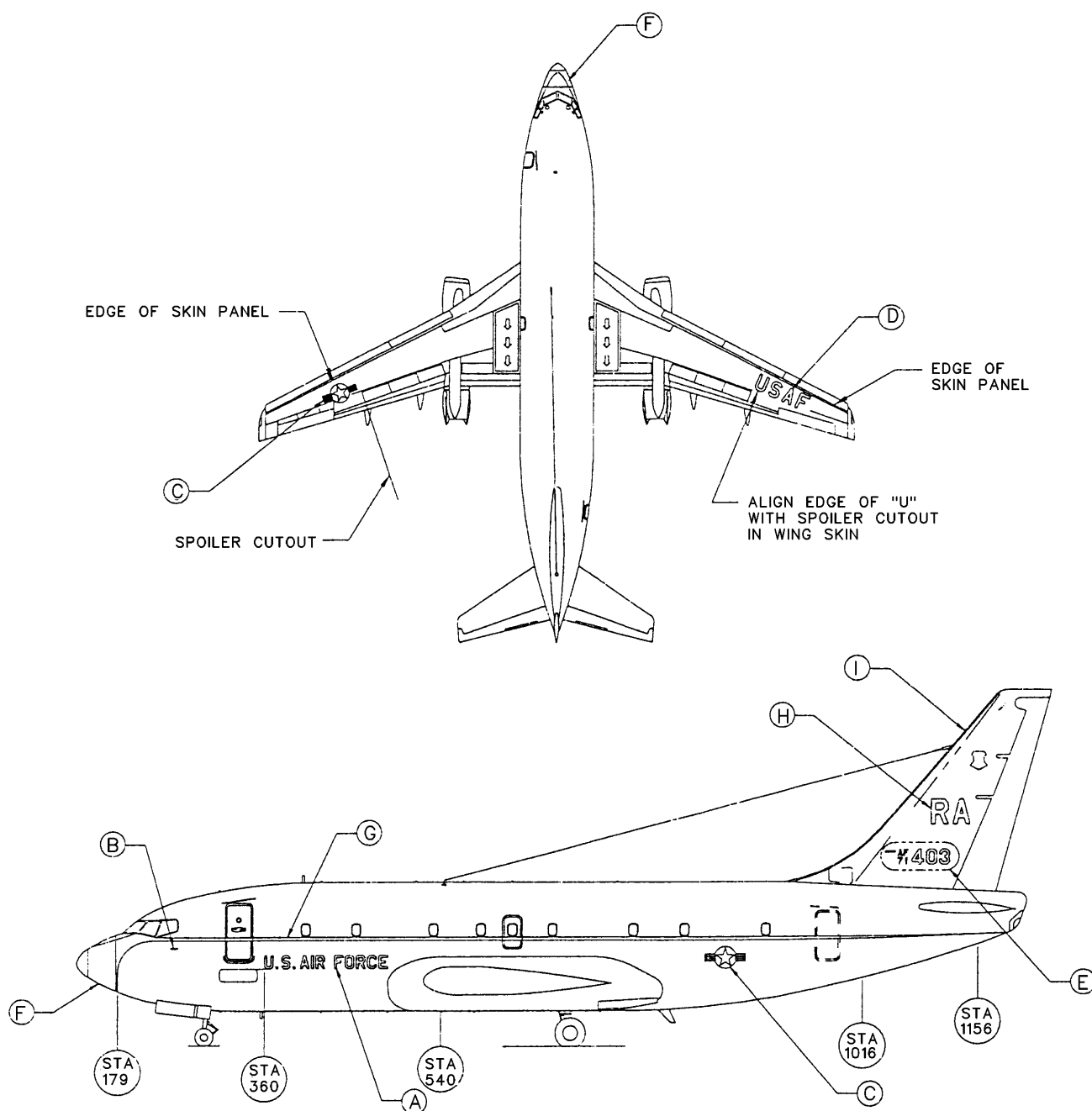


Figure B-21. T-43A Aircraft Marking Specification

TO 1-1-4

*T-43A AIRCRAFT EXTERIOR FINISHING-SYSTEM (SEE NOTE 2, Page B-1)*

Area	FORMER SYSTEM		STANDARD SYSTEM	
	Color No.	System	Color No.	System
All exterior areas except as specified			17925	MIL-C-83286/MIL-C-85285
Battery Compartment			17925	MIL-C-83286/MIL-C-85285
Landing Gear			17925	MIL-C-83286/MIL-C-85285
Wheel Wells			17925	MIL-C-83286/MIL-C-85285
Flap Wells			17925	MIL-C 83286/MIL-C-85285
Radome			BAC 701 17038	MIL-C-83231, Type II
Relief Tube Areas			17925	MIL-C-83286/MIL-C-85285
Walkways				
Engine Exhaust Path				
APU Exhaust			17925	MIL-C-83286/MIL-C-85285
Heater Exhaust Path			17925	MIL-C-83286/MIL-C-85285
Plastic Parts			BAC 701 17038	MIL-C-83231, Type II

## **APPENDIX C**

### **SPECIAL PURPOSE AIRCRAFT MARKINGS**

TO 1-1-4

**LIST OF ILLUSTRATIONS**

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C-2	RC-130 Aircraft Conspicuity Marking.....	C-4
C-3	C-140 Aircraft Conspicuity Marking.....	C-5
C-4	T-39 Aircraft Conspicuity Marking.....	C-6

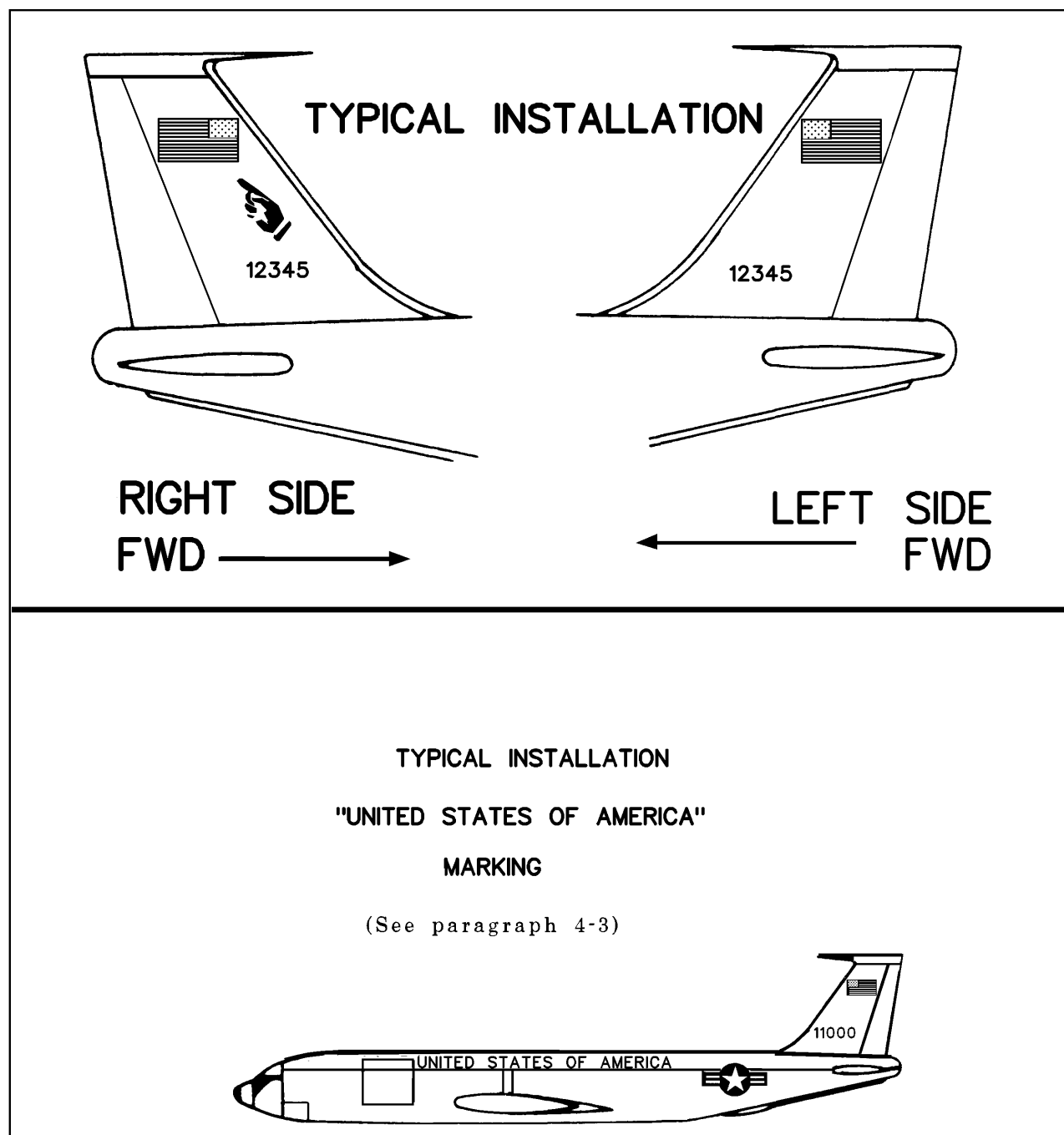
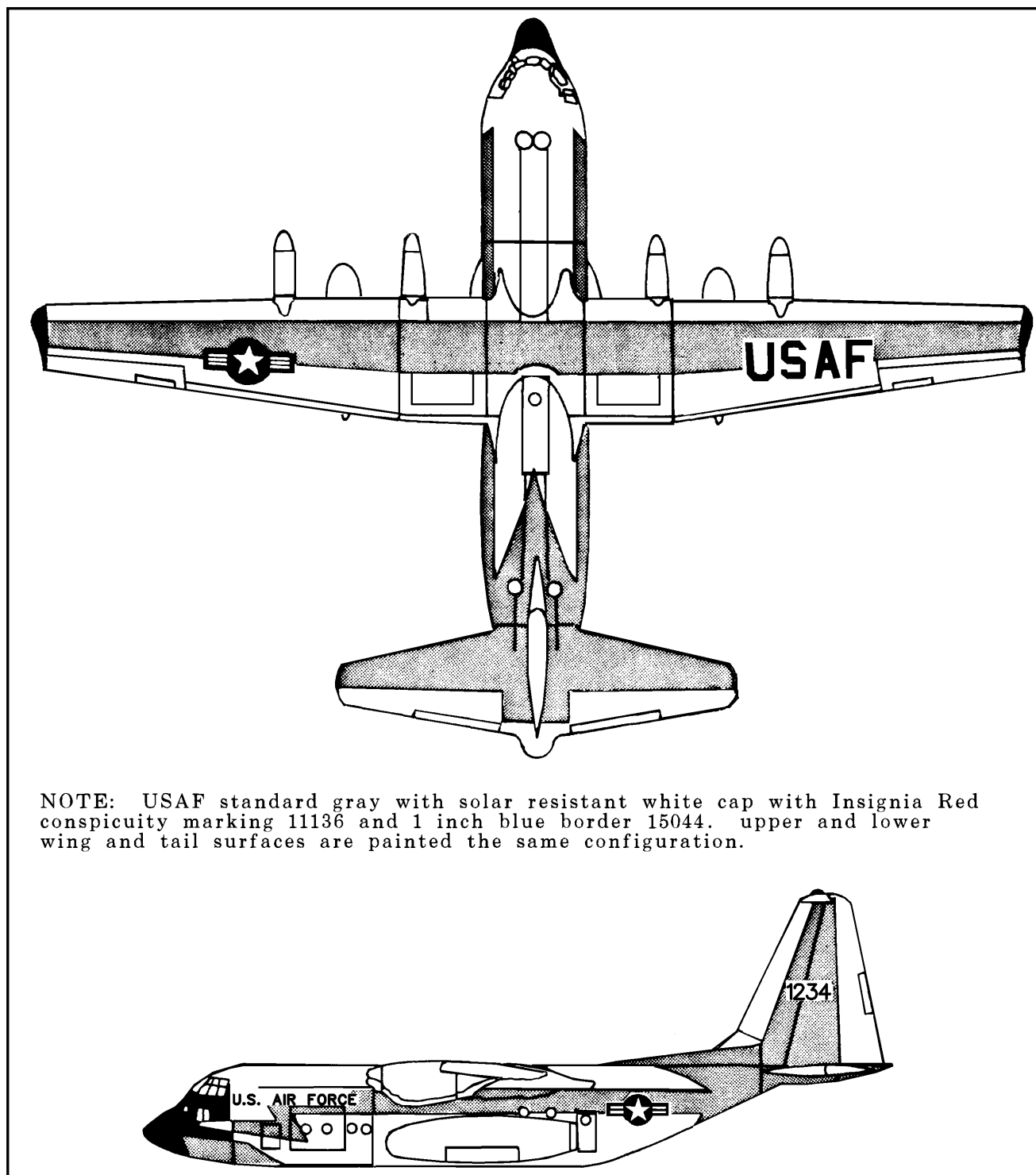


Figure C-1. U. S. Flag Marking

TO 1-1-4

*Figure C-2. RC-130 Aircraft Conspicuity Marking*

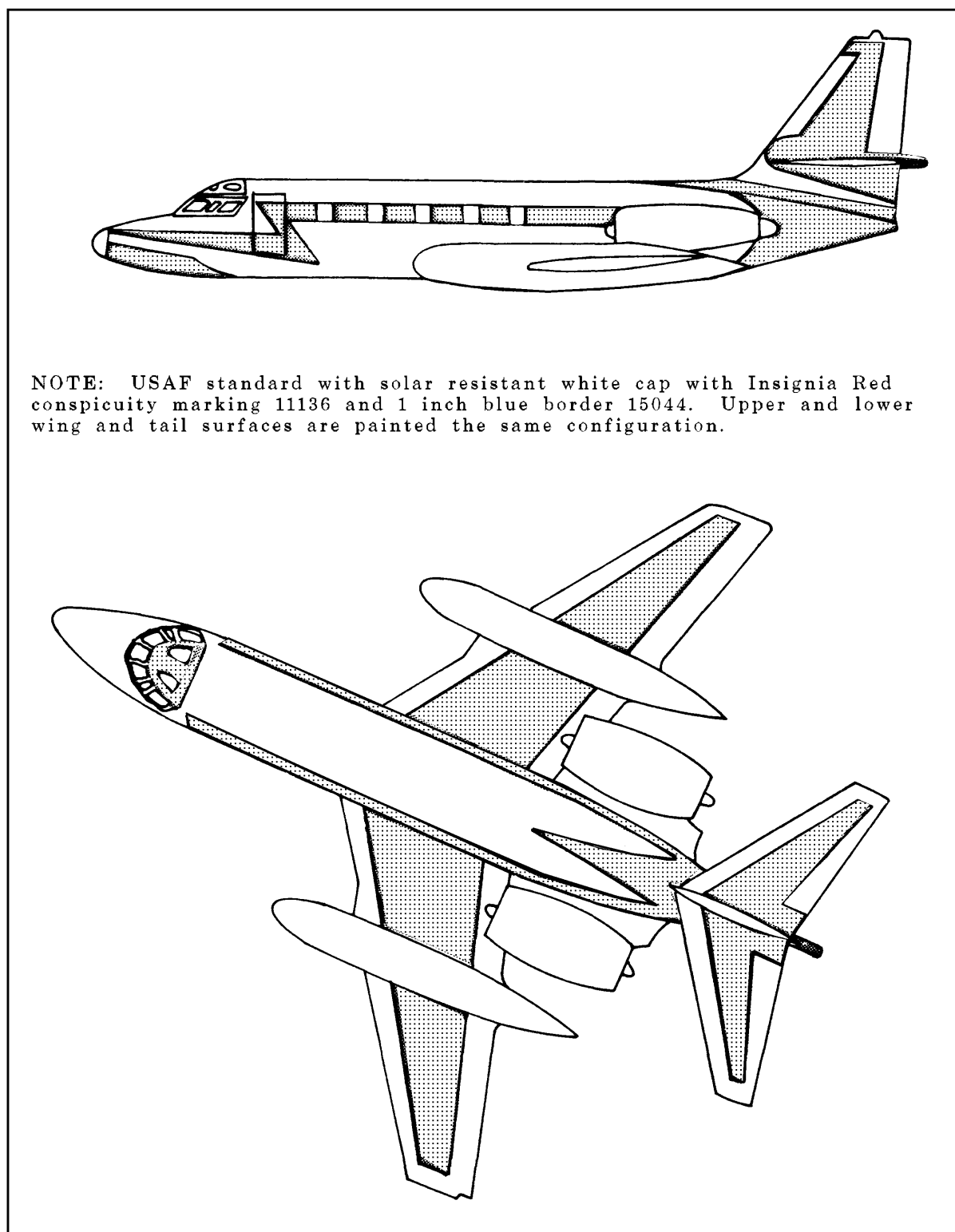


Figure C-3. C-140 Aircraft Conspicuity Marking



TO 1-1-4

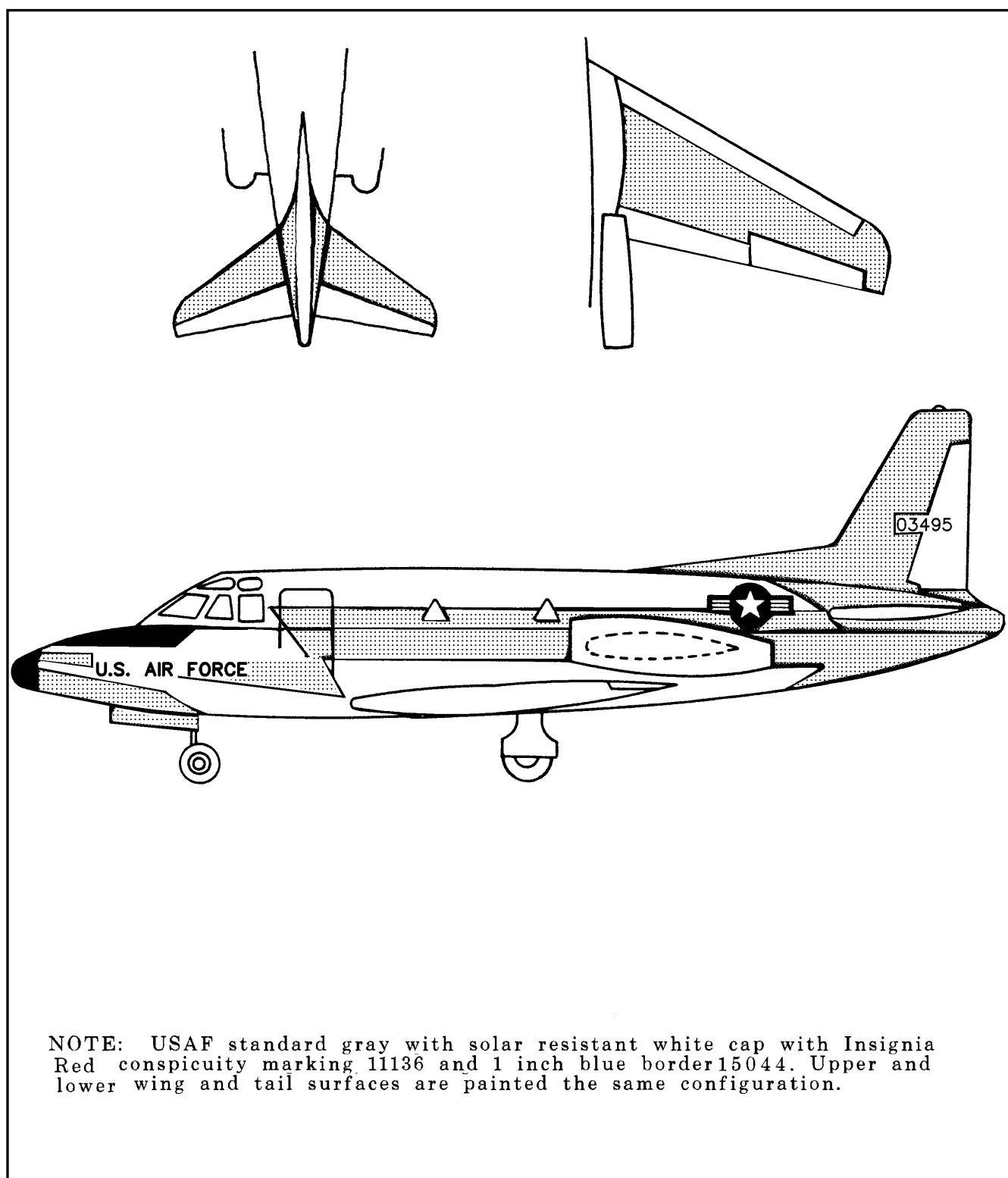


Figure C-4. T-39 Aircraft Conspicuity Marking

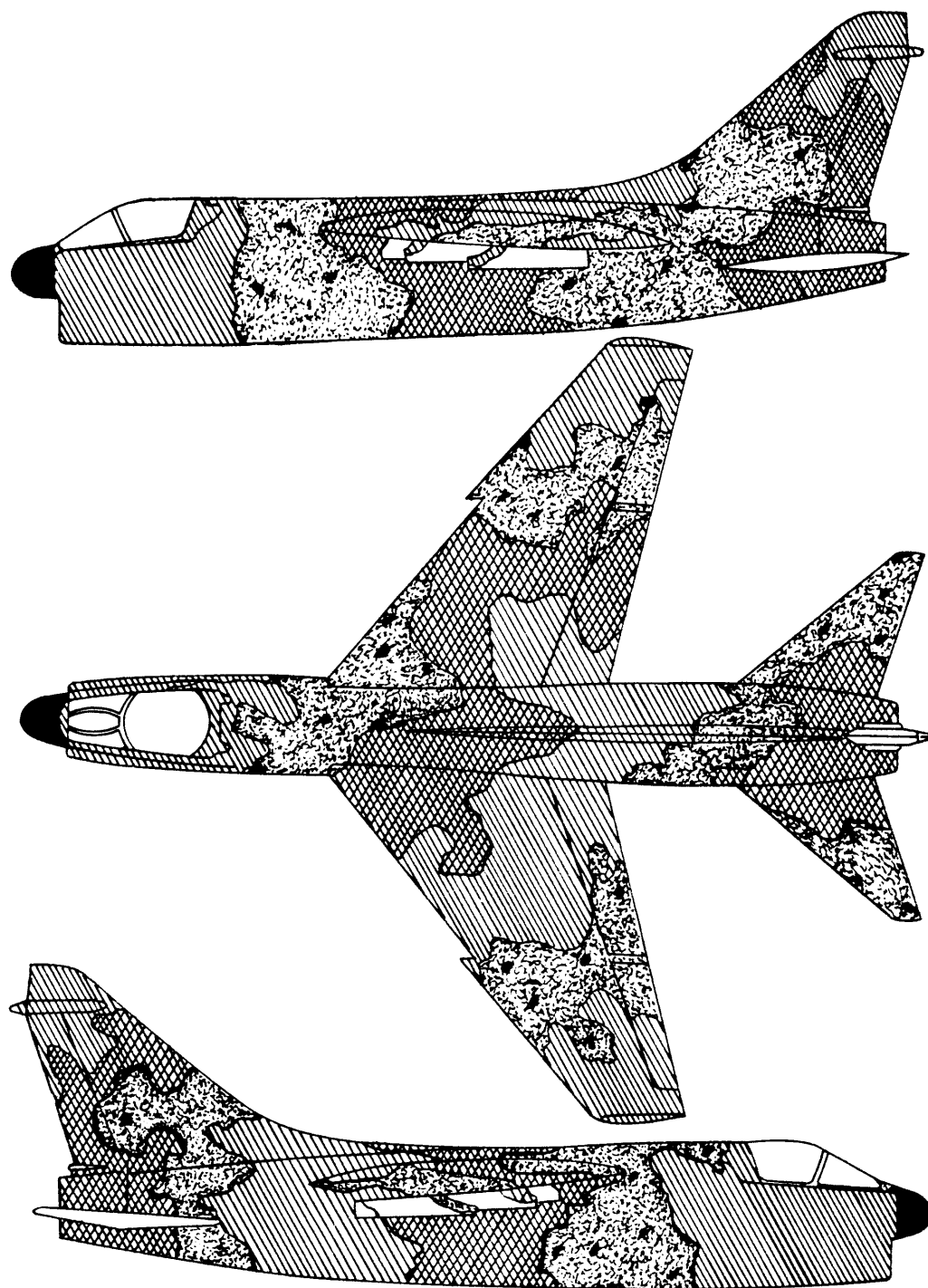
**APPENDIX D**  
**SPECIFICATIONS - CAMOUFLAGE PATTERNS**  
**AND MARKINGS FOR USAF AIRCRAFT**

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NOTE:  
RANDOM COATING  
WILL BE MIL-C-83231  
(BLACK)

TAN  
NO. 30219

GREEN  
NO. 34079

GREEN  
NO. 34102

Figure D-1. A-7 Aircraft Camouflage Pattern (Sheet 1 of 2)

TO 1-1-4

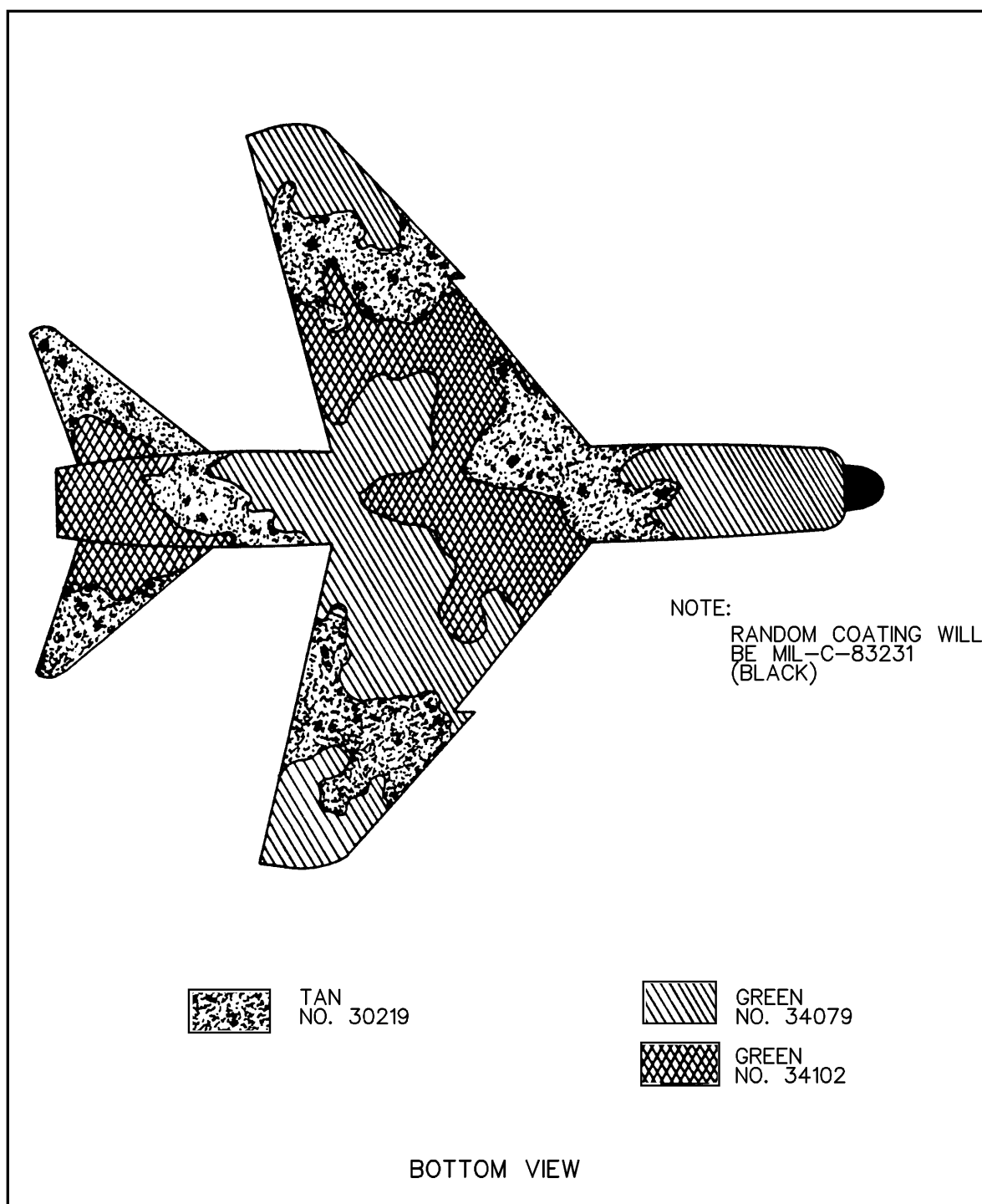


Figure D-1. A-7 Aircraft Camouflage Pattern (Sheet 2 of 2)

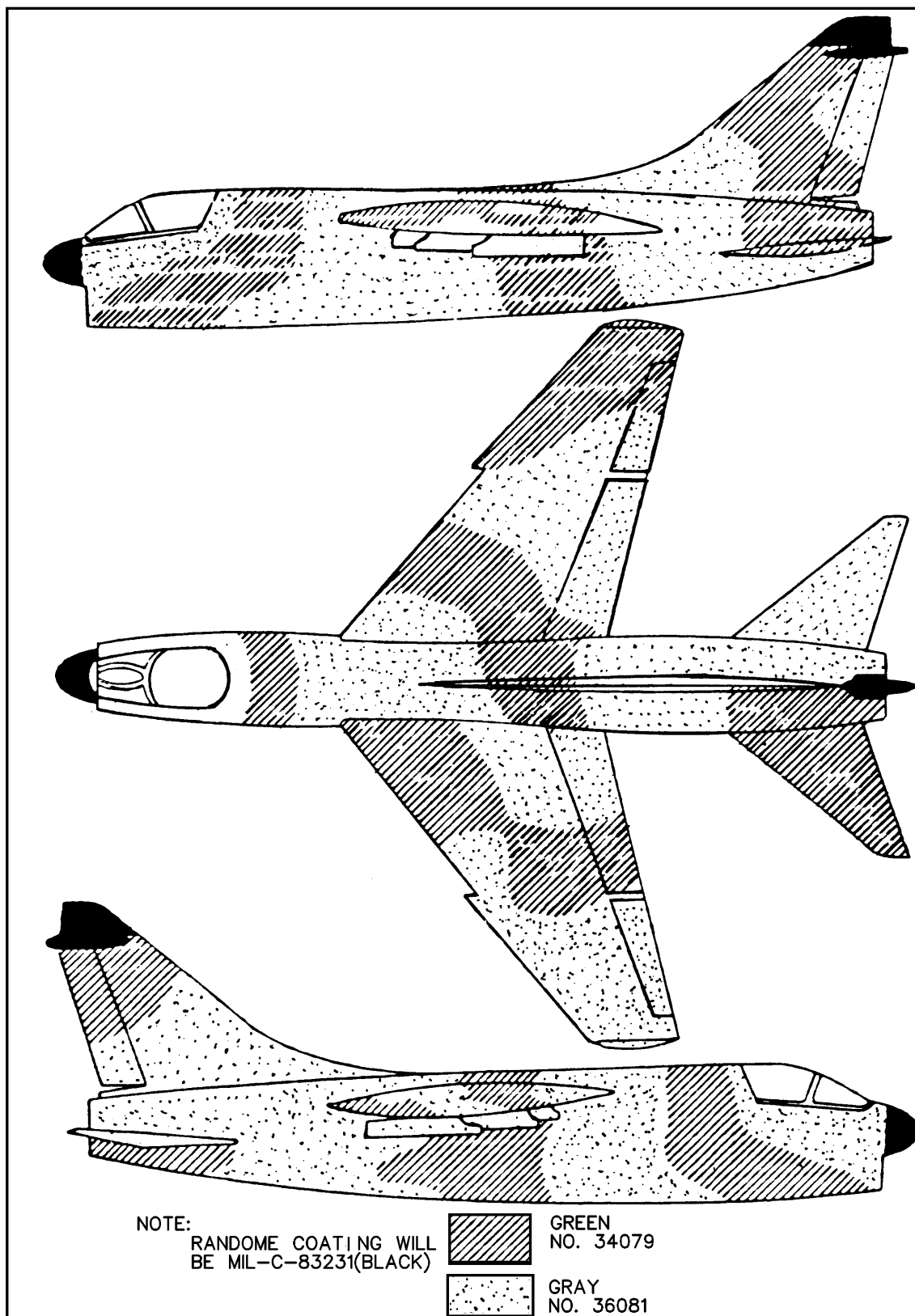


Figure D-2. ANG A-7 Aircraft Camouflage Pattern (Sheet 1 of 2)

TO 1-1-4

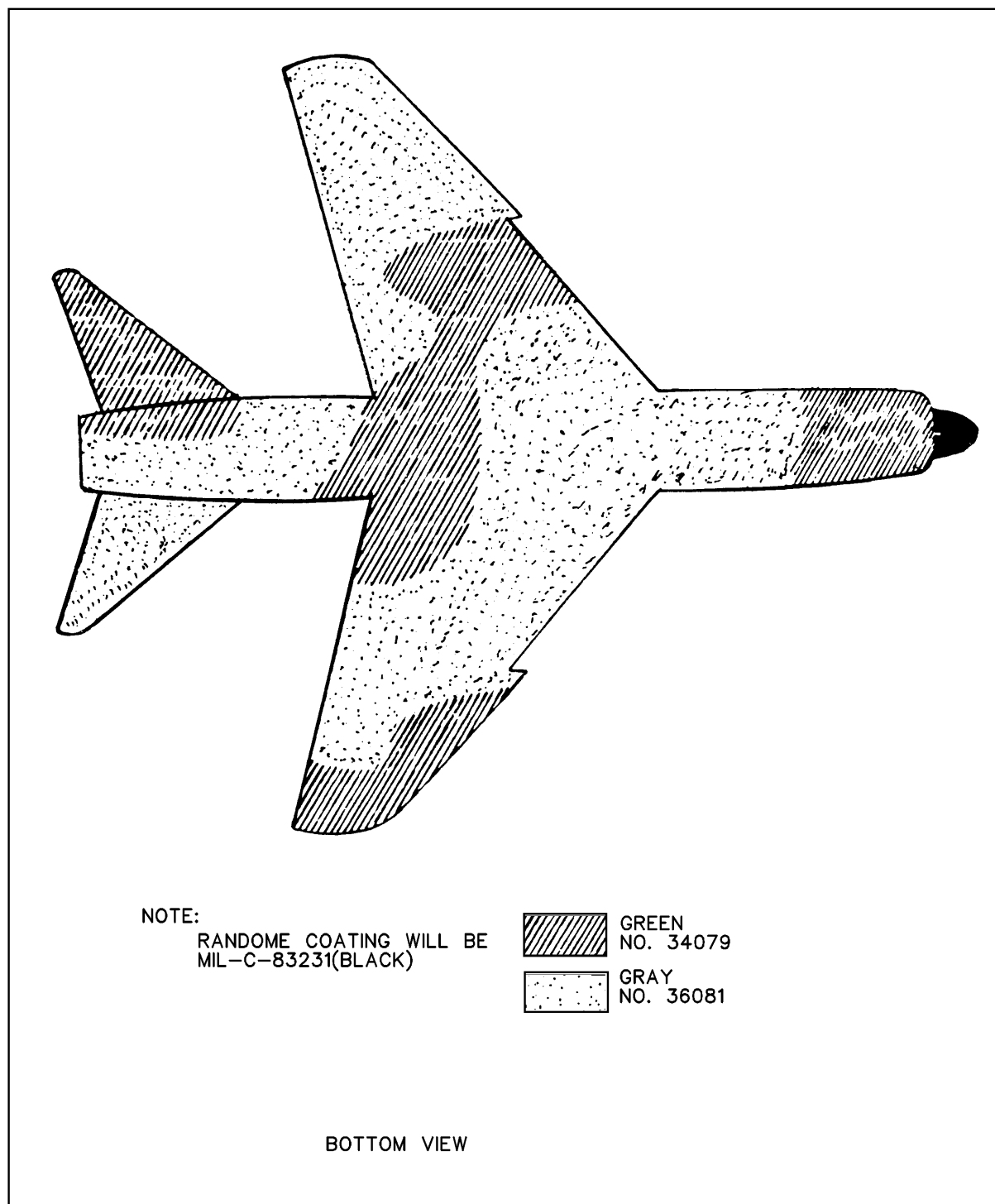


Figure D-2. ANG A-7 Aircraft Camouflage Pattern (Sheet 2 of 2)

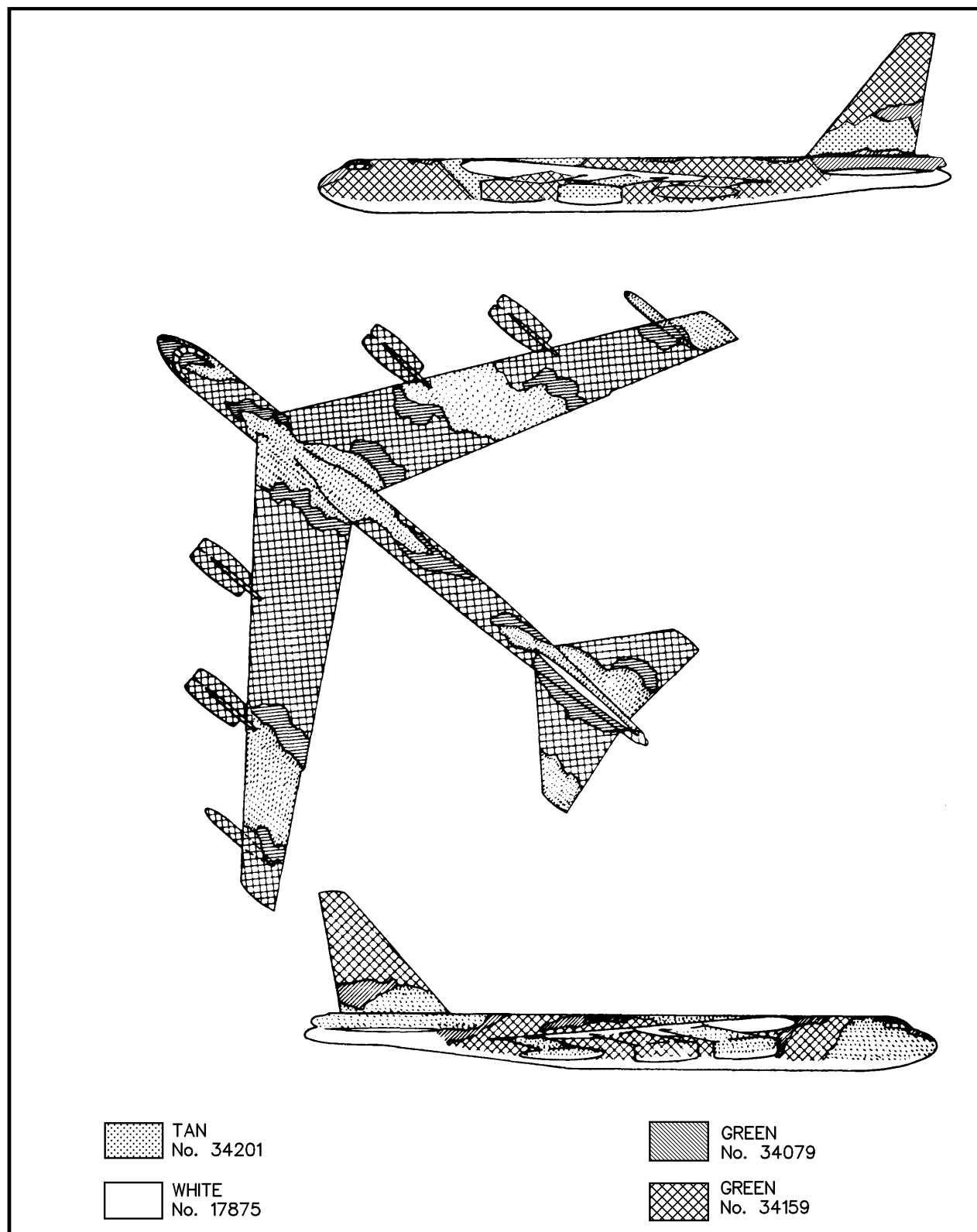


Figure D-3. B-52 Aircraft Camouflage Pattern



TO 1-1-4

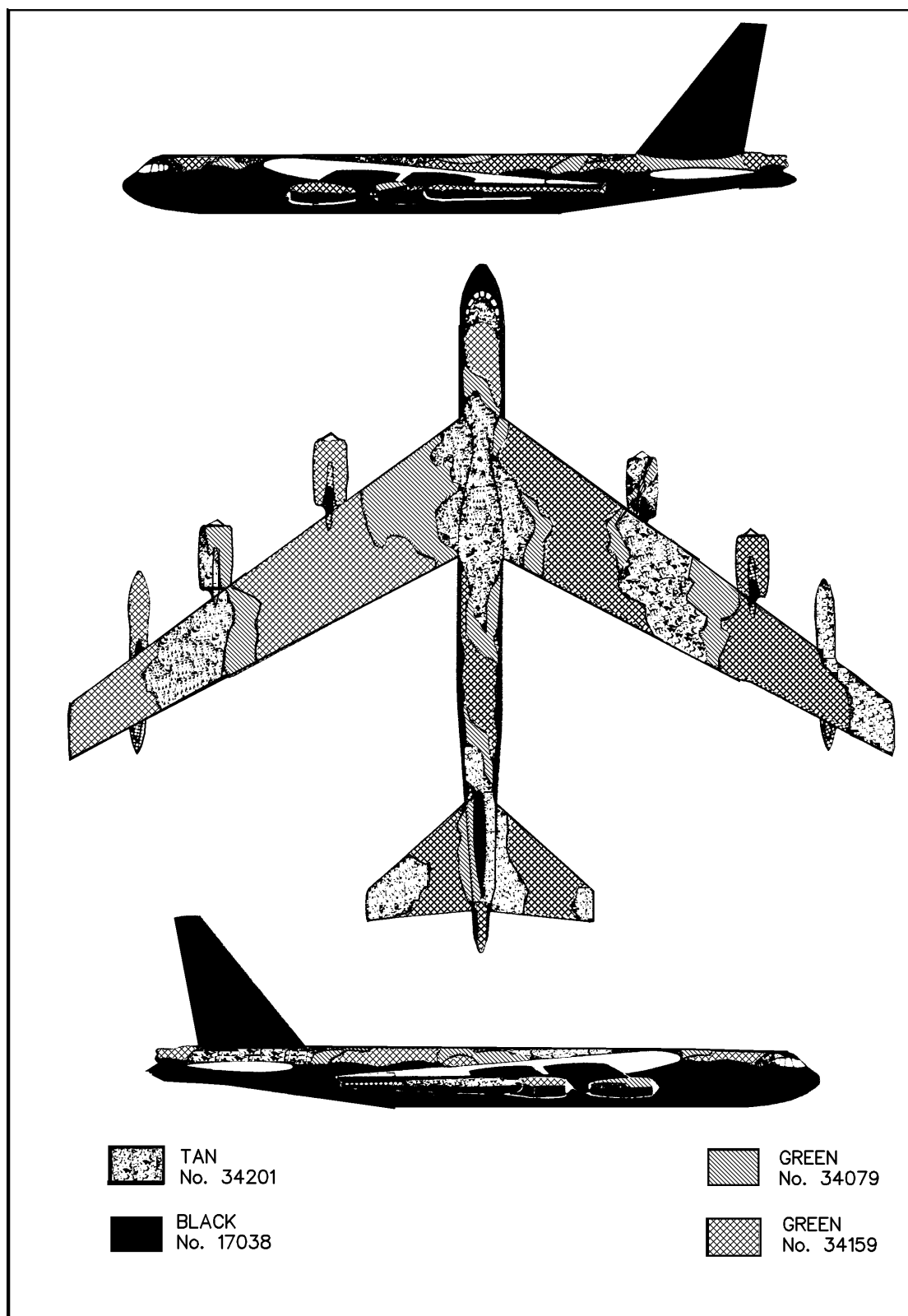


Figure D-4. B-52 Aircraft SEA Camouflage Pattern

## NOTE:

- (1) ALL COLORS TO BE "GUNSHIP QUALITY."
- (2) TOTAL ENGINE NACELLES AND PYLONS ARE GRAY NO. 36118.
- (3) ALL BOTTOM SURFACES ARE GRAY NO. 36118.
- (4) ALL OF NOSE RADOME IS GREEN NO. 34092.

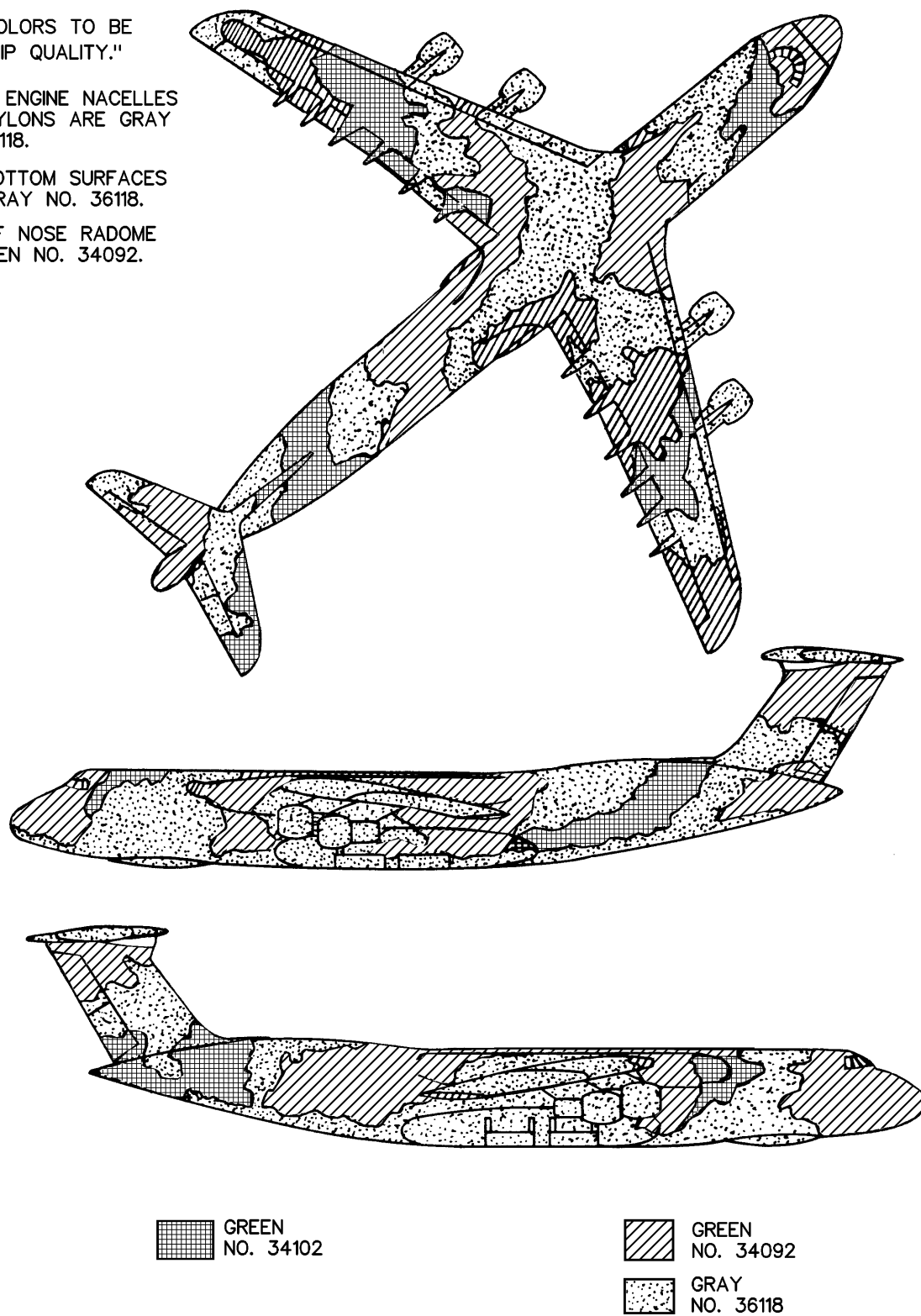


Figure D-5. C-5 Aircraft European I Camouflage Pattern

TO 1-1-4

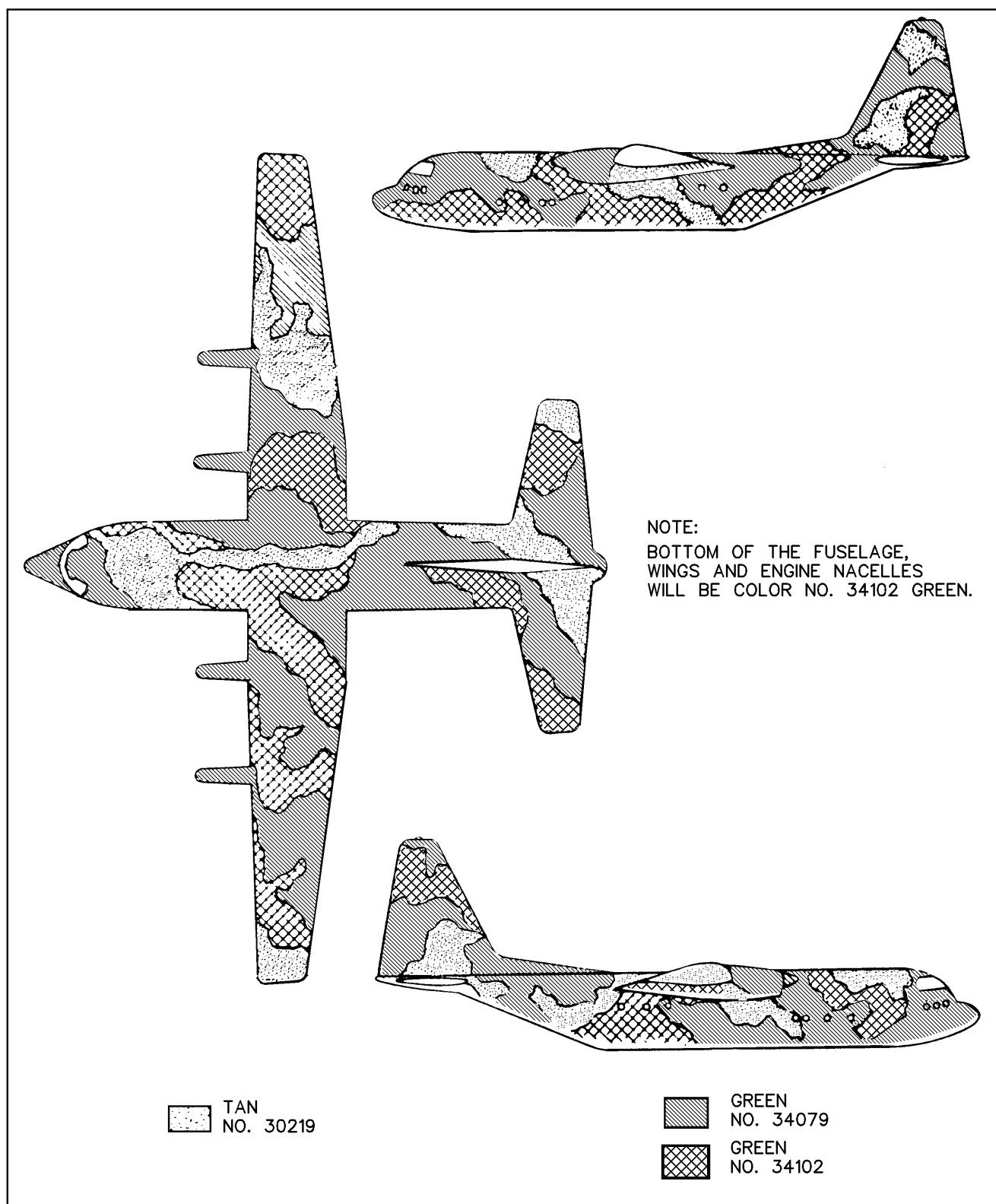


Figure D-6. C-130 Aircraft Camouflage Pattern

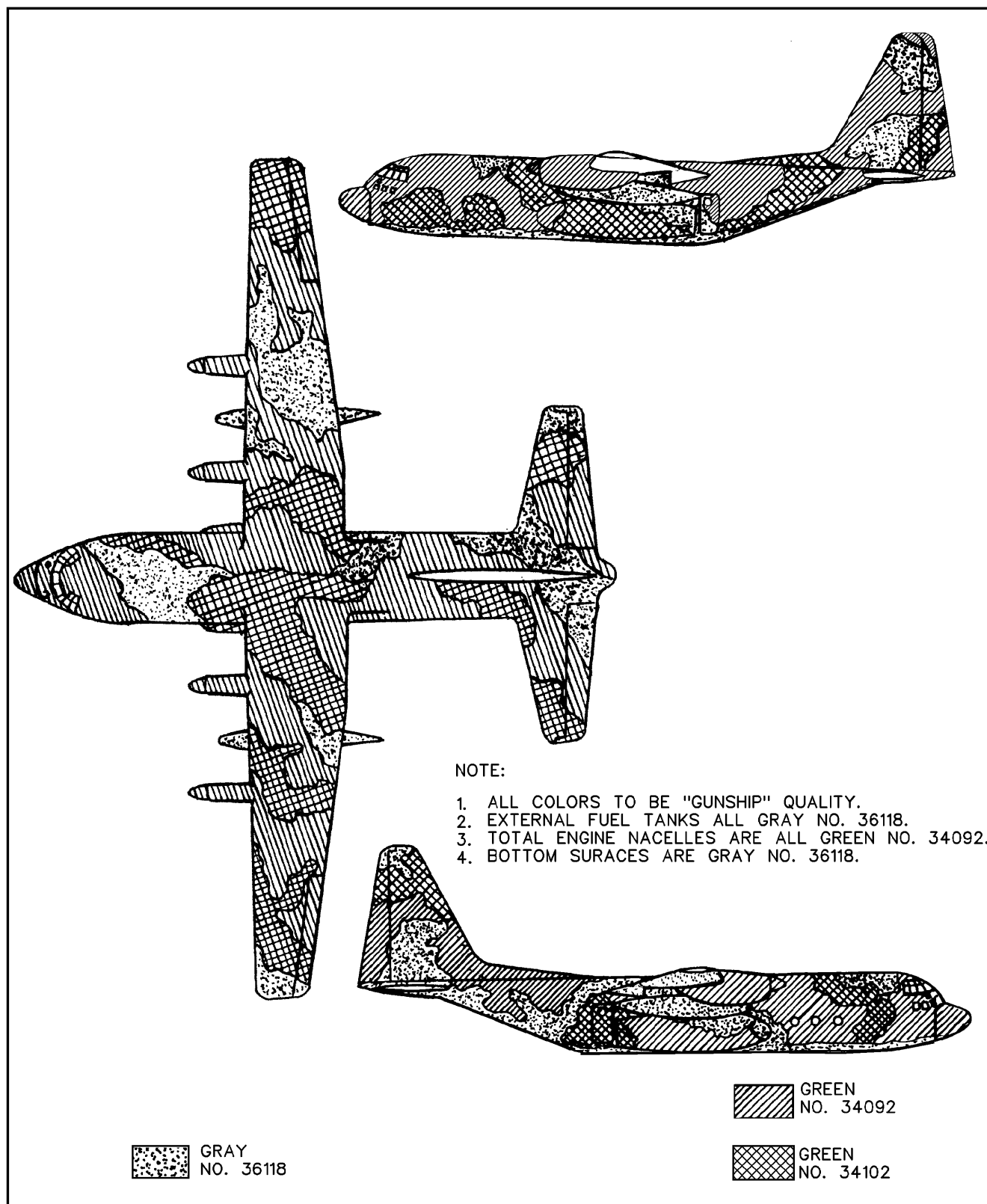


Figure D-7. C-130 Aircraft Camouflage Pattern, European I

TO 1-1-4

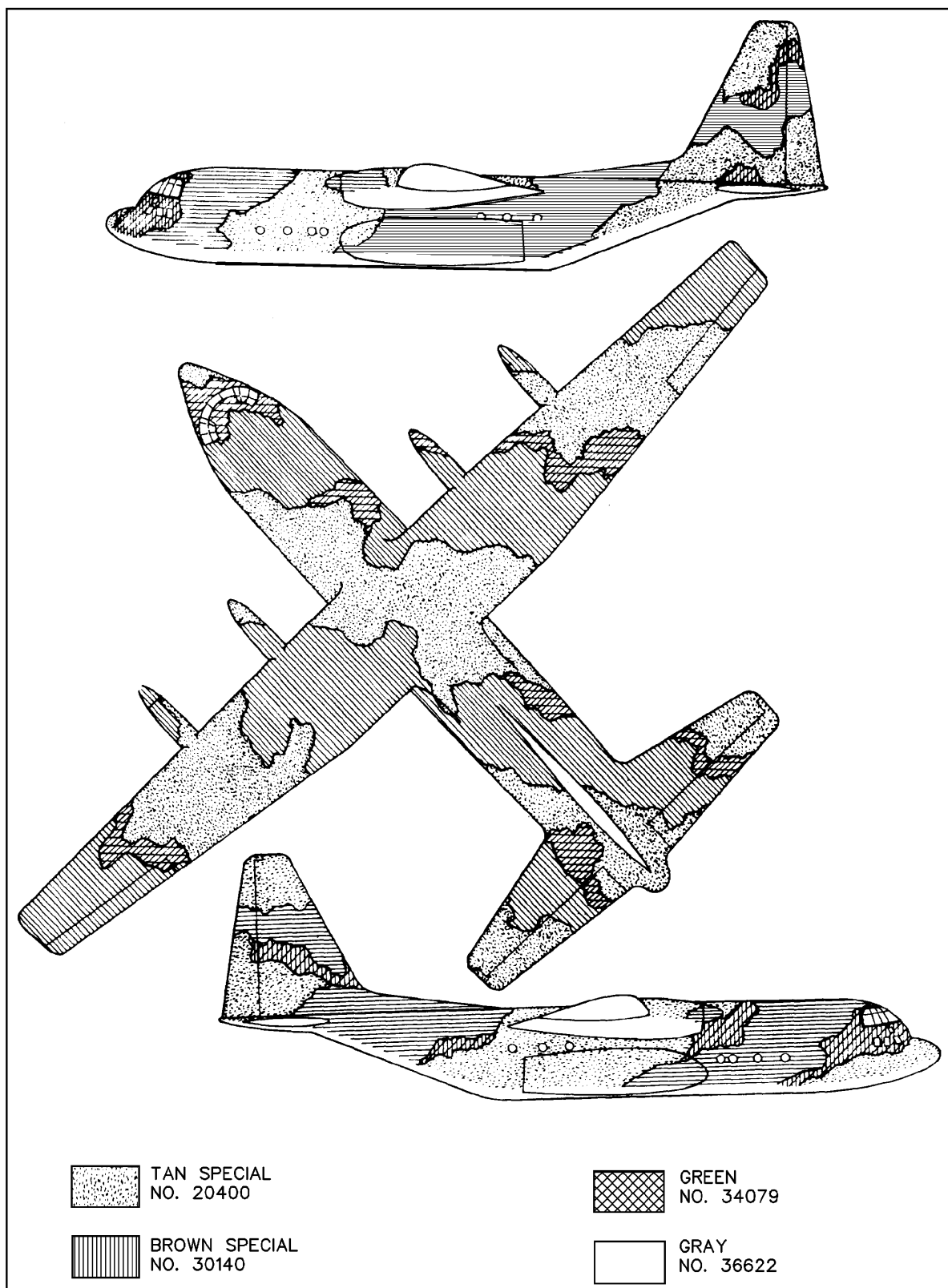
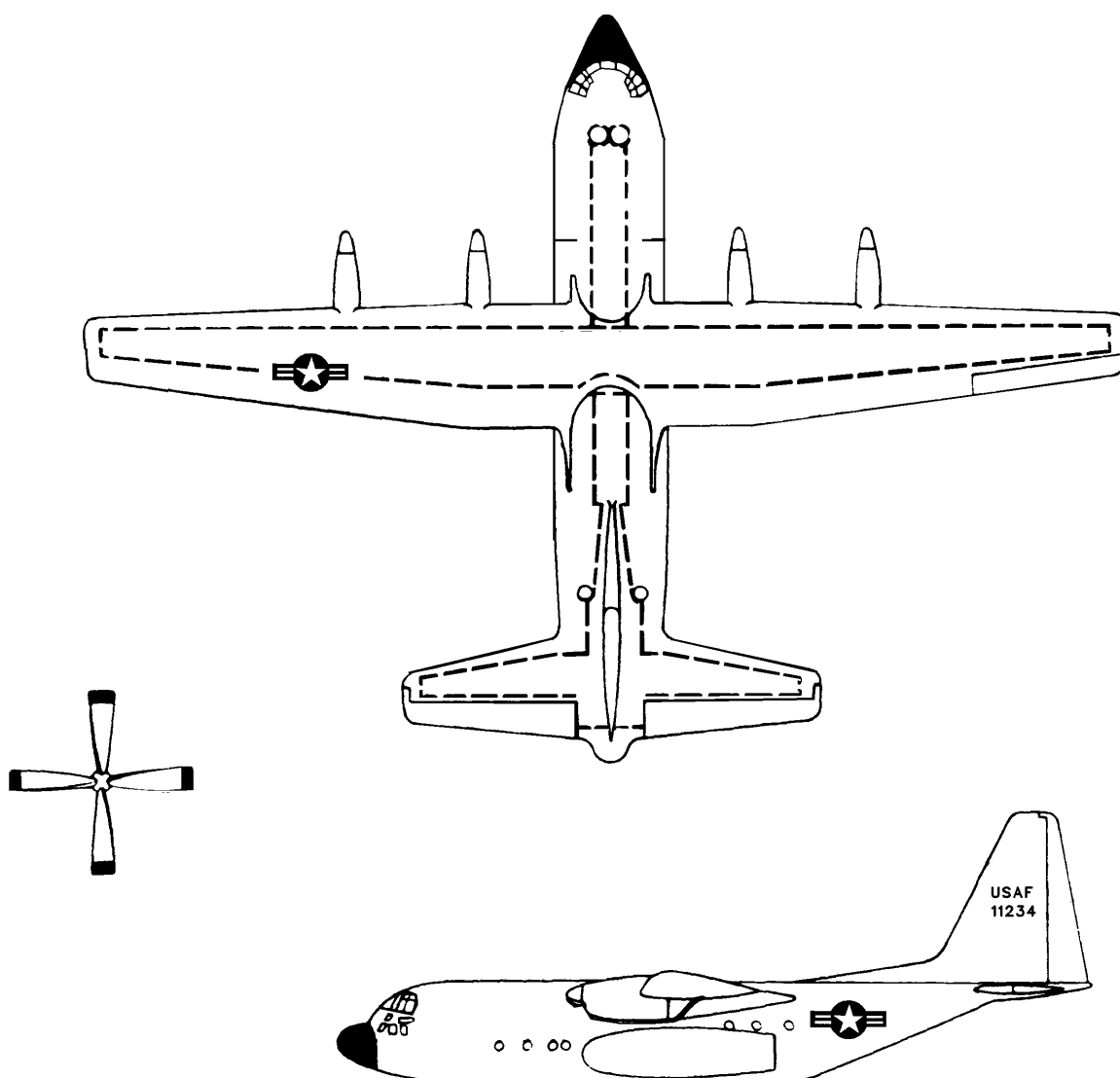


Figure D-8. C-130 Aircraft Camouflage Pattern For Asia Minor



NOTE: ALL EXTERIOR FINISH AND MARKINGS SHALL CONFORM TO AF DRAWING 7434744, USING MIL-C-83286 "GUNSHIP" POLYURETHANE PAINT, COLOR CODE 36118.

Figure D-9. AC-130 Exterior Finish and Markings, Special Project

TO 1-1-4

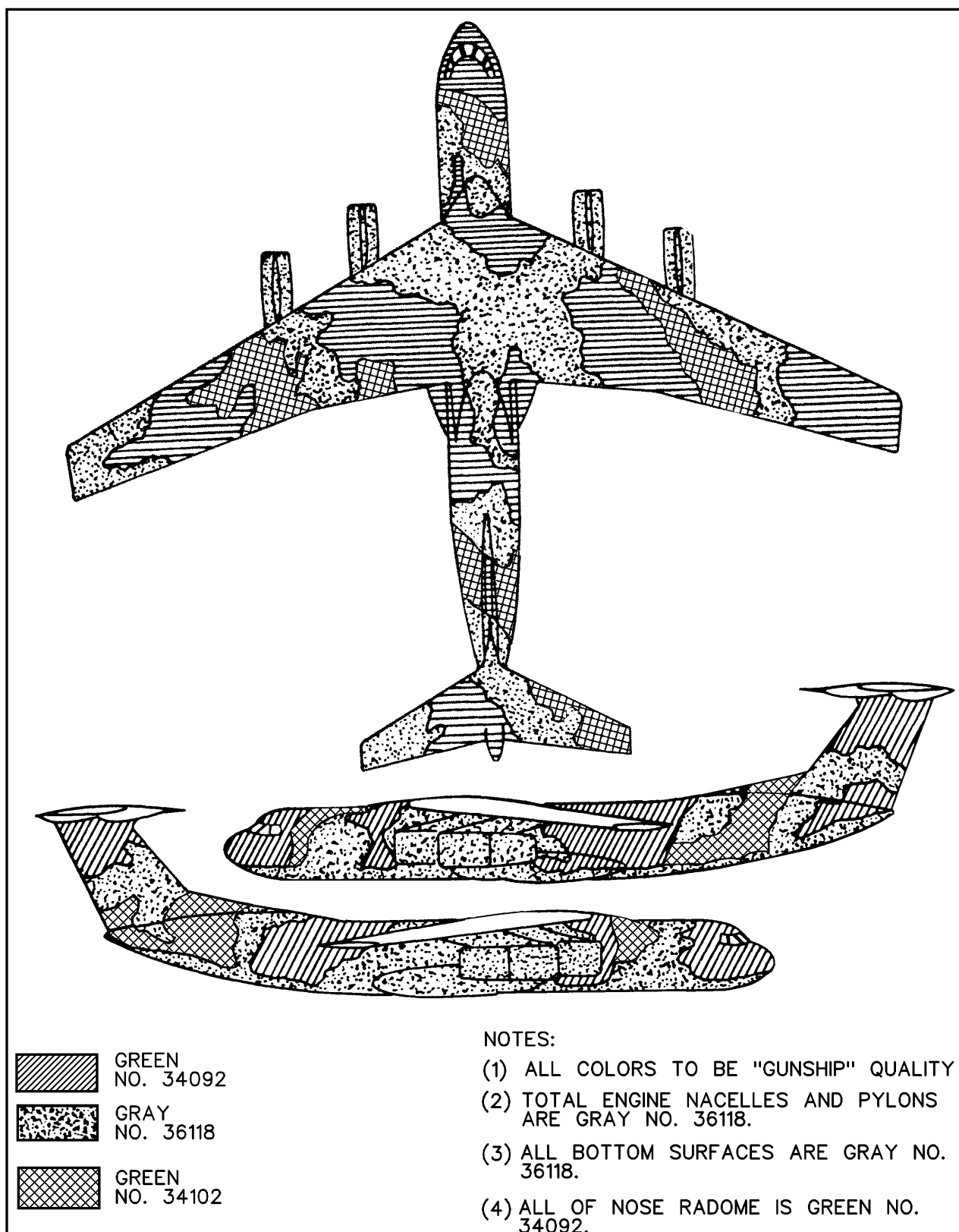


Figure D-10. C-141A European I Camouflage Pattern



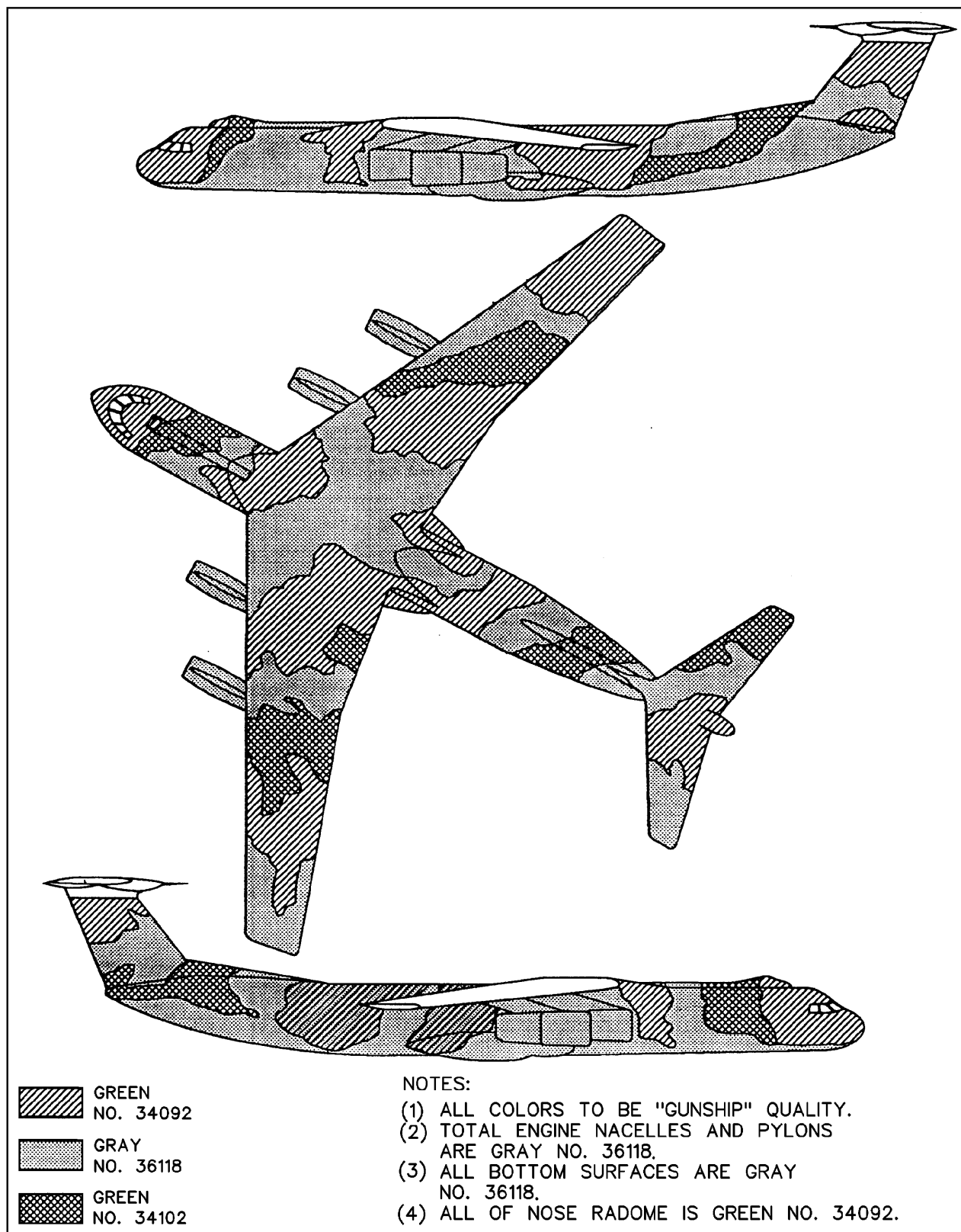


Figure D-11. C-141B Aircraft Camouflage Pattern, European I



TO 1-1-4

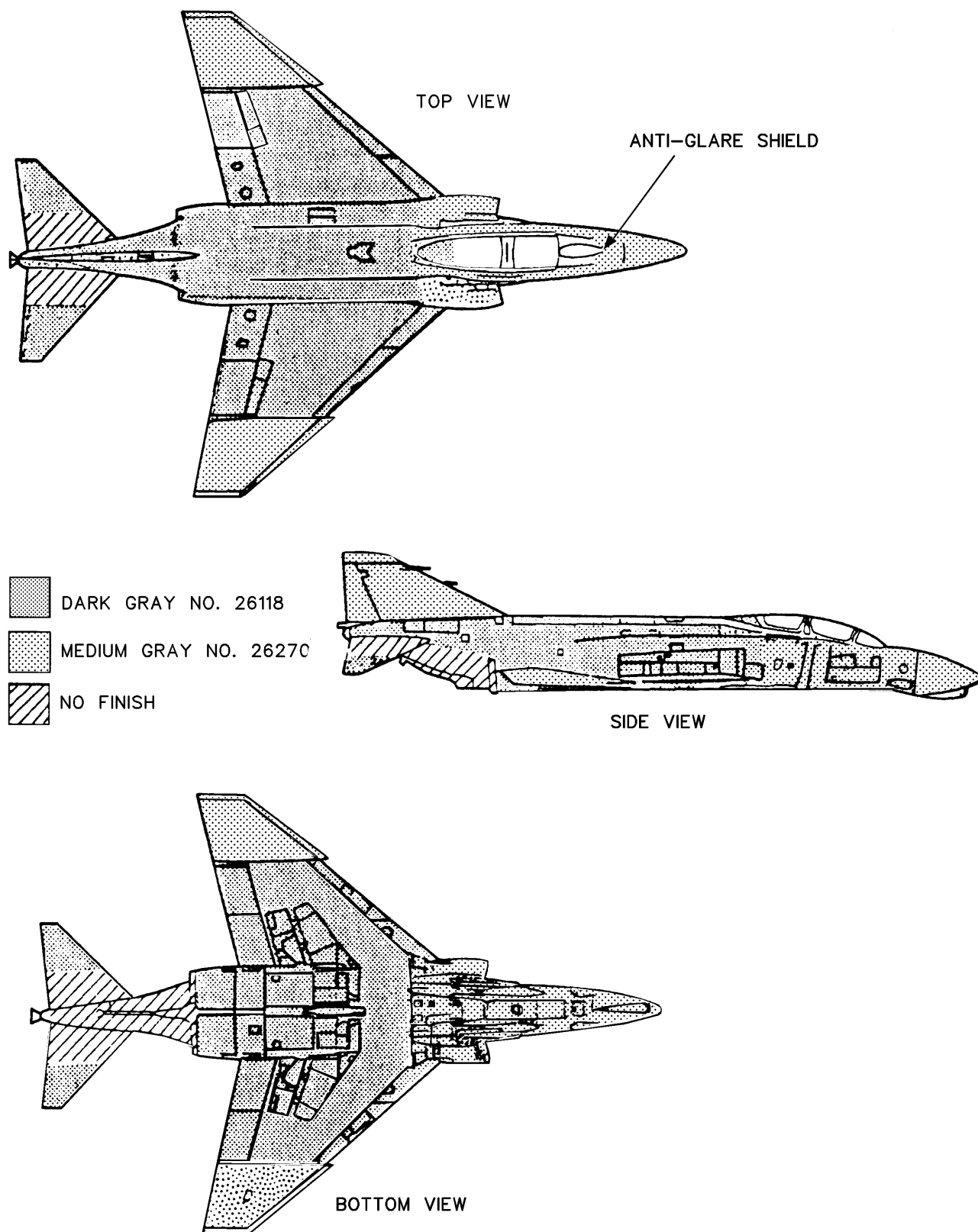


Figure D-12. F/RF-4 Aircraft Wraparound Camouflage Exterior Paint Pattern

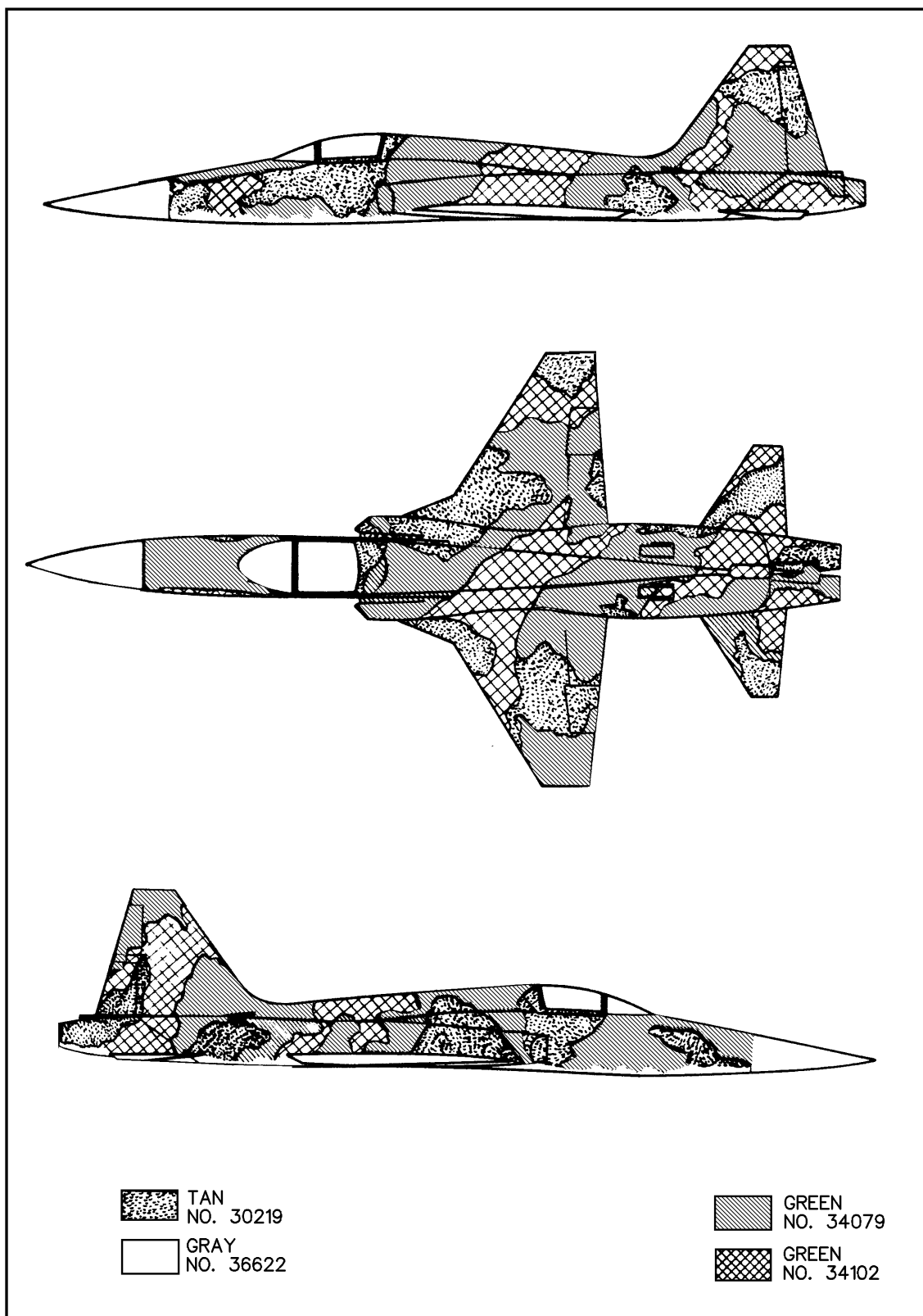


Figure D-13. F-5 Aircraft Camouflage Pattern

TO 1-1-4

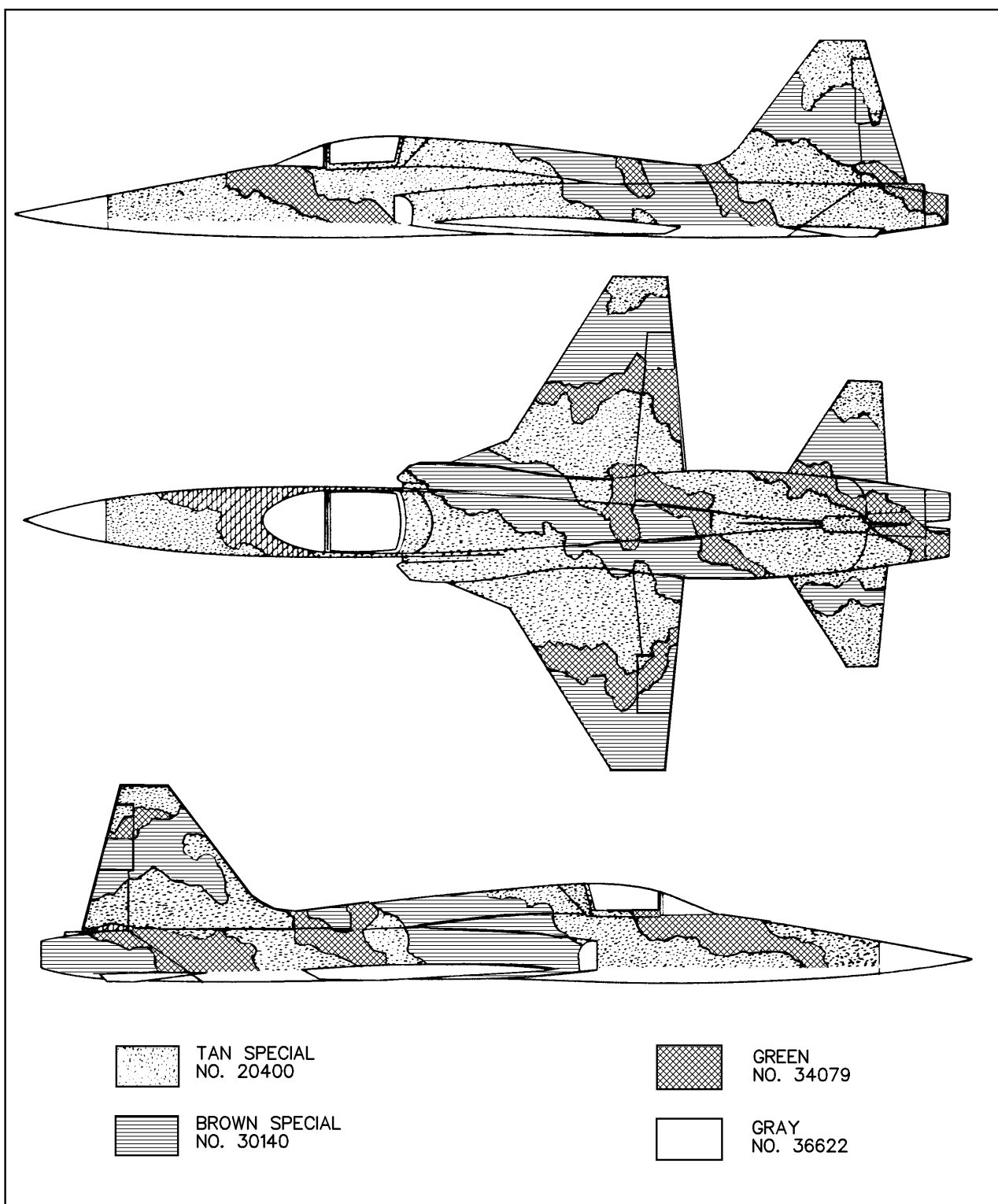
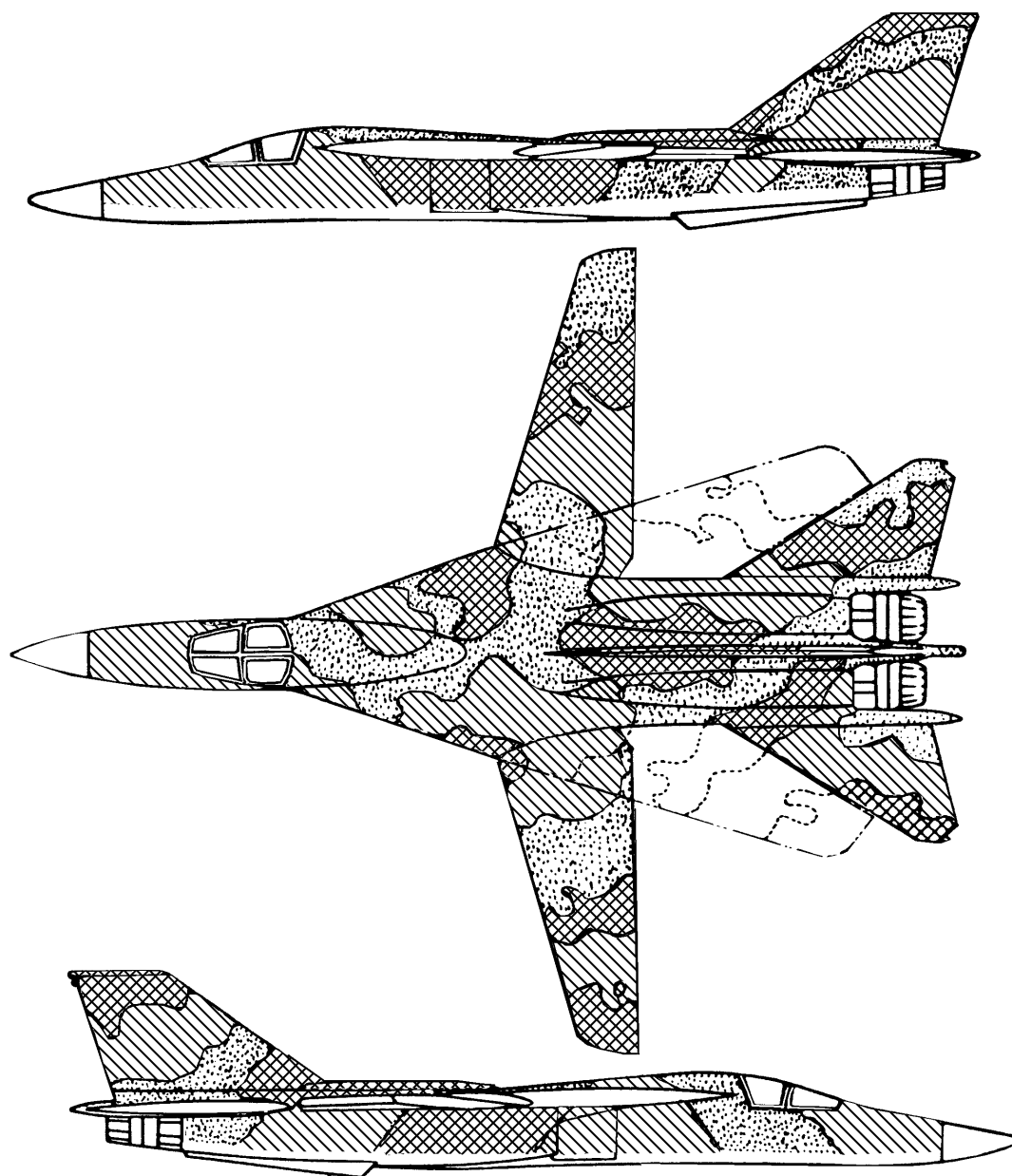


Figure D-14. F-5 Aircraft Camouflage Pattern For Asia Minor



## NOTE:

1. Upper nose of F-111A will be painted iaw TO 11F-111A-2-1-1.  
Pylons and external fuel tanks will be painted iaw TO 1F-111A-2-1-1.
2. F-111 D/E/F pylons and external fuel tanks will be painted  
iaw TO 1F-111E-2-1-1.



TAN  
NO. 30219



BLACK  
NO. 37038



GREEN  
NO. 34079



GREEN  
NO. 34102

Figure D-15. F-111 A/D/E/F Aircraft Camouflage Pattern

TO 1-1-4

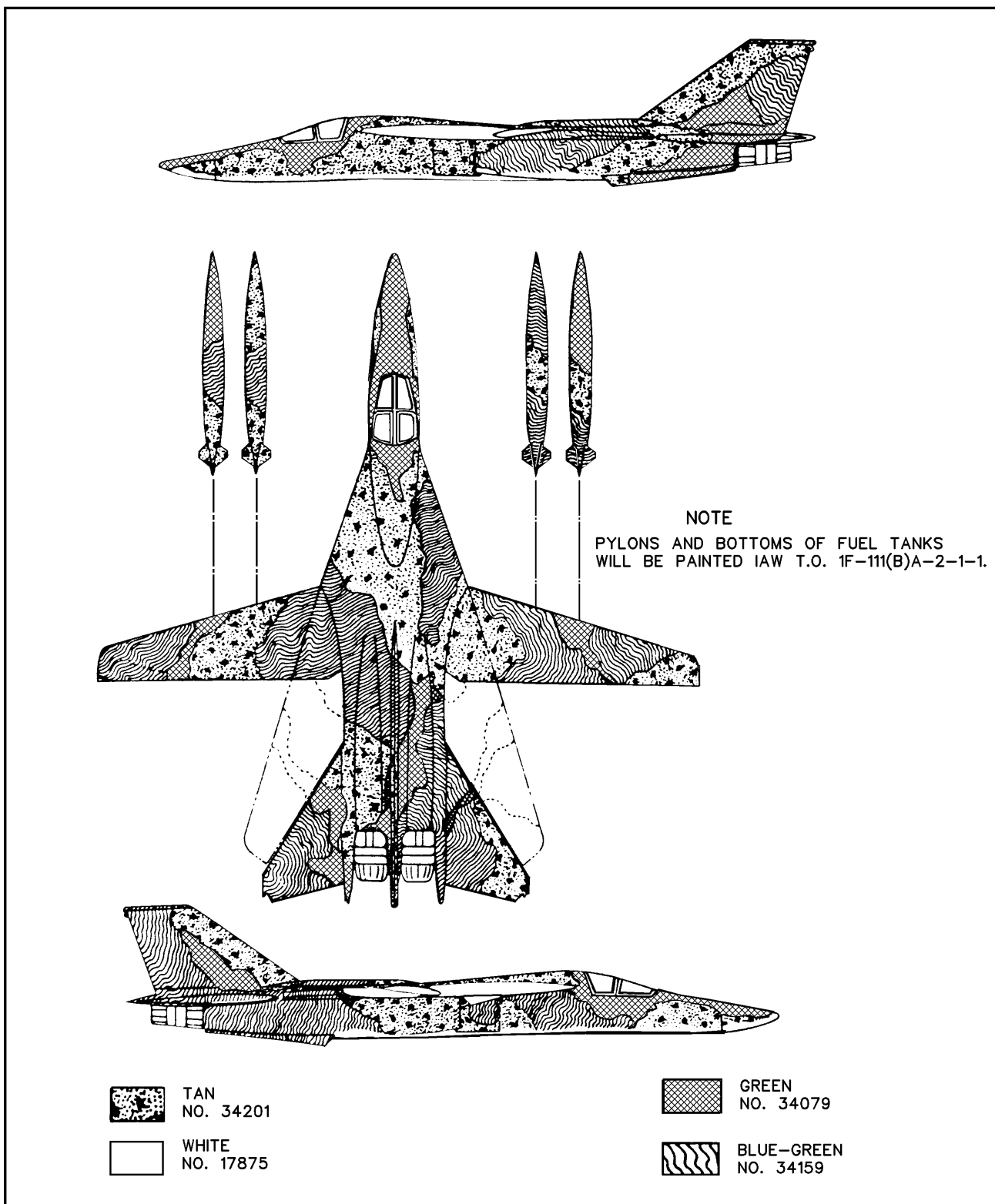


Figure D-16. FB-111A Aircraft Camouflage Pattern

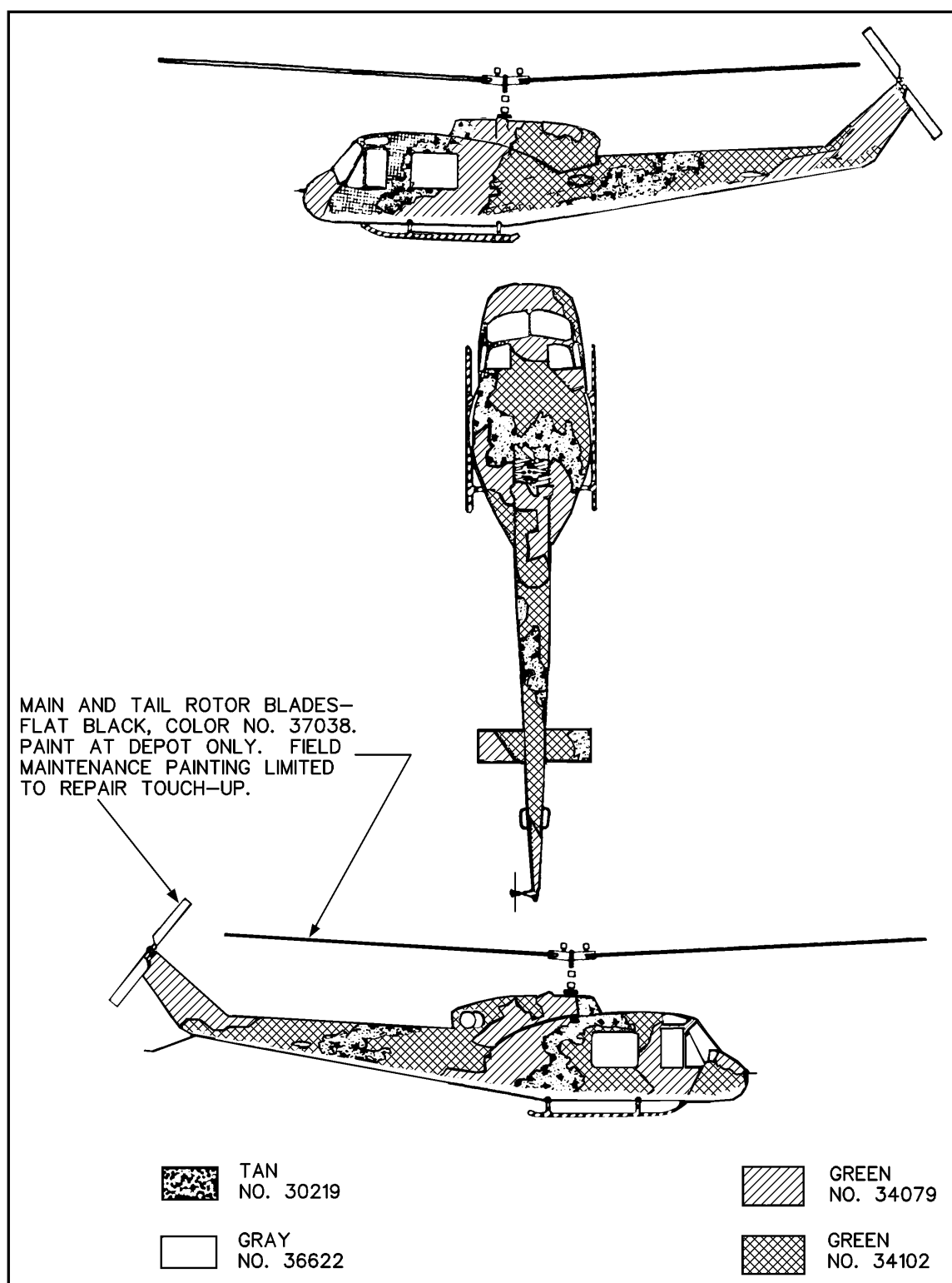


Figure D-17. H-1F/D/N/H Aircraft Standard Camouflage Pattern

TO 1-1-4

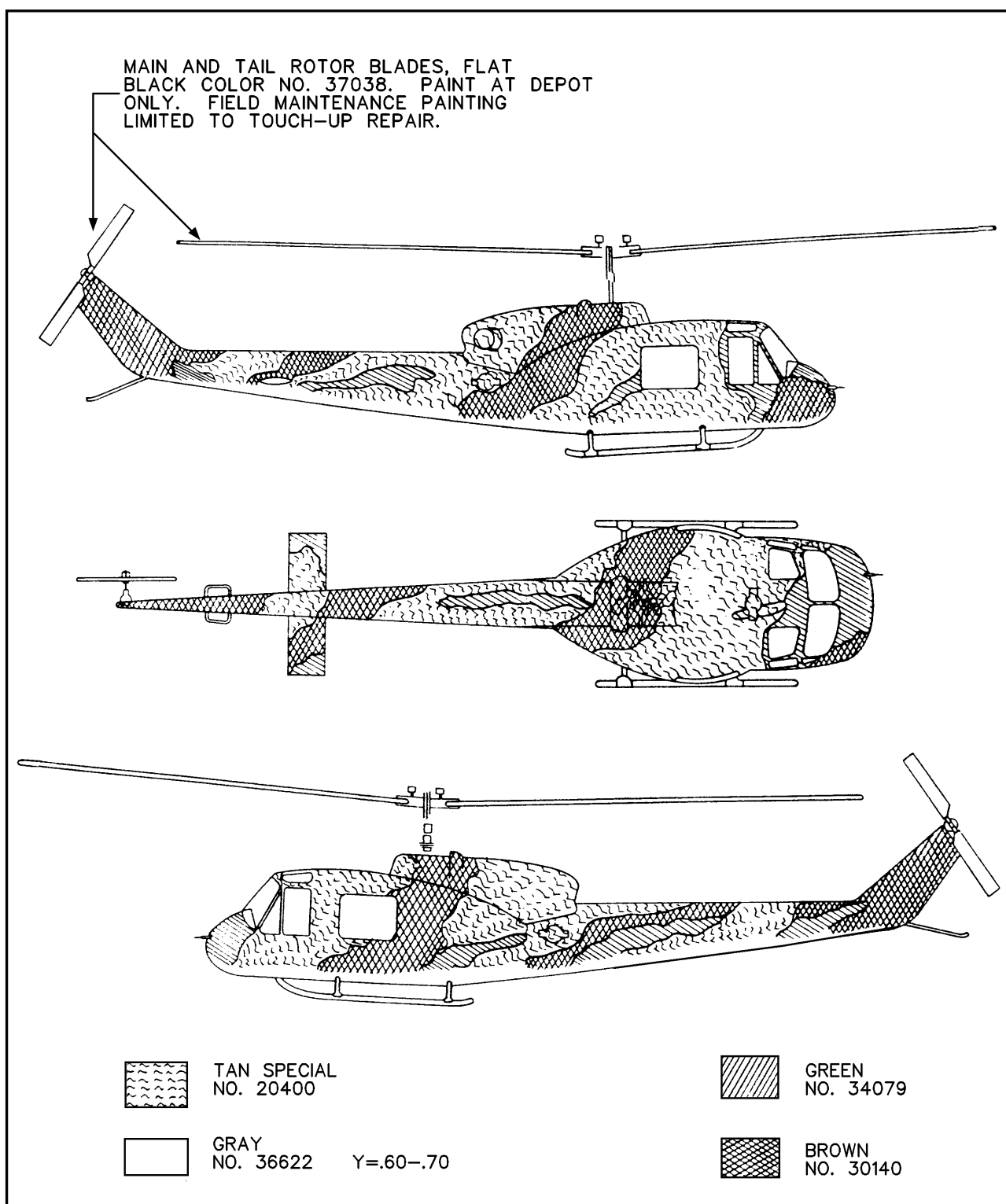


Figure D-18. UH-1F/D/N/H Aircraft Camouflage Pattern



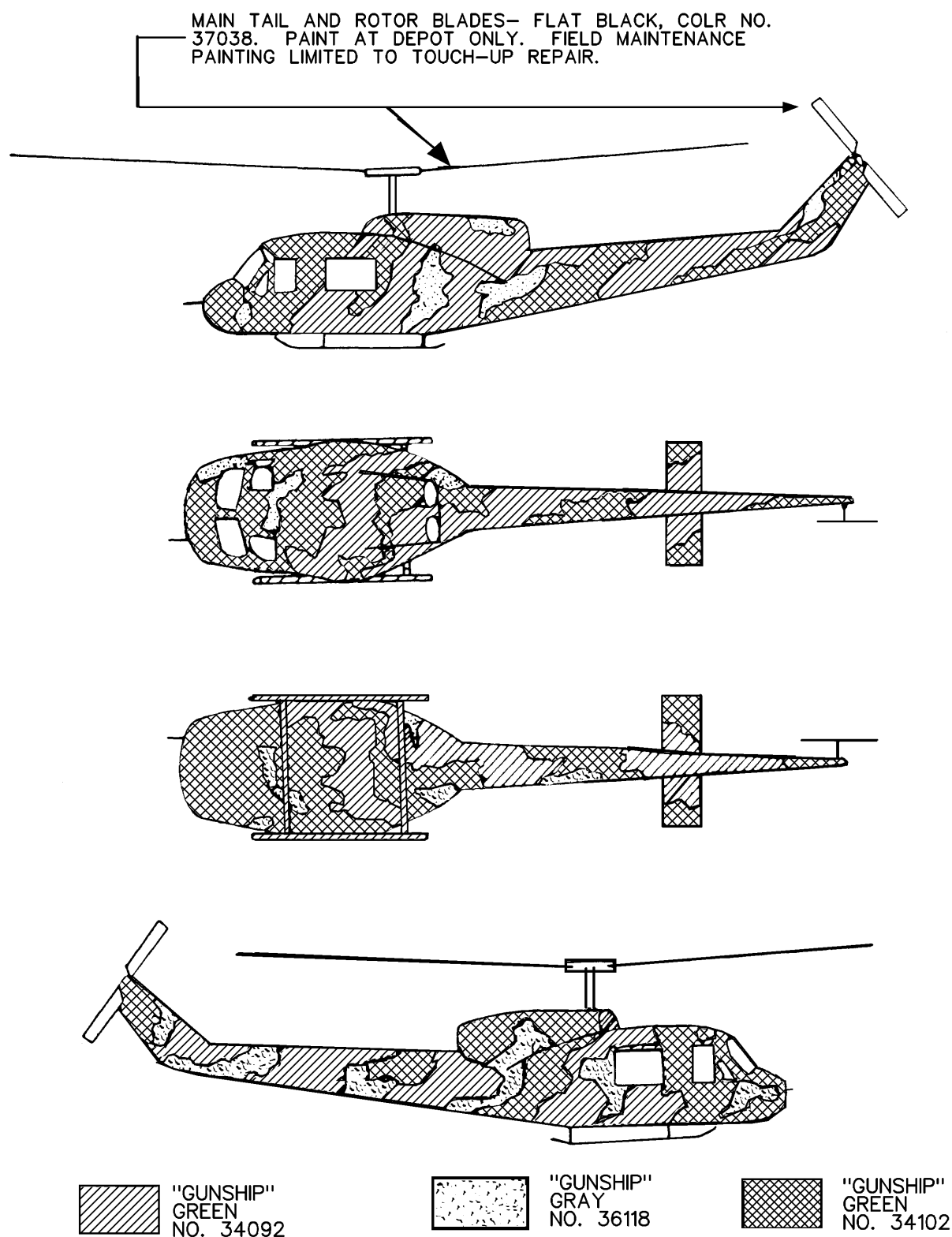


Figure D-19. UH-1F/D/N/H Aircraft European I Camouflage Pattern



TO 1-1-4

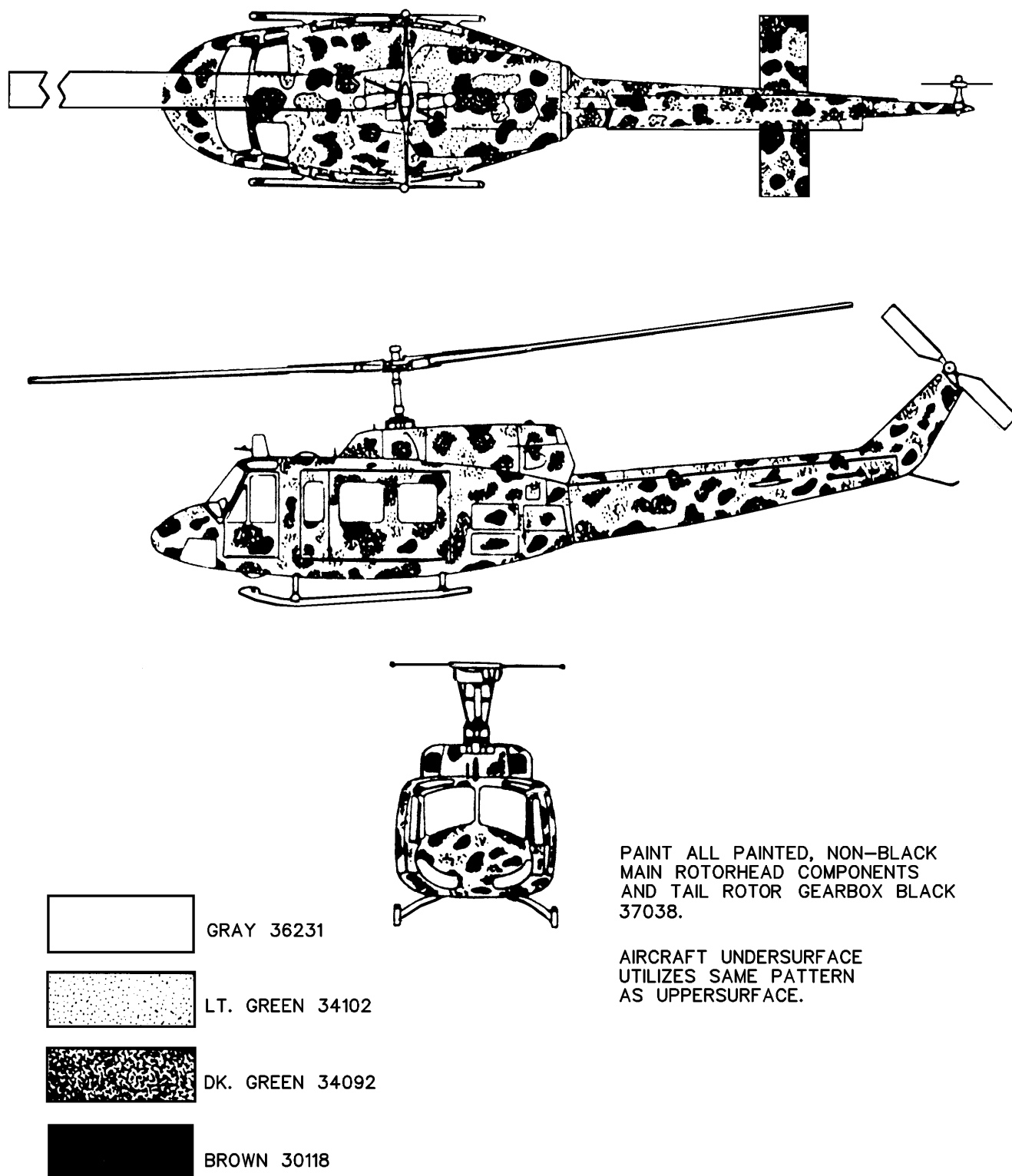


Figure D-20. UH-1N Aircraft "Leopard" Camouflage Pattern

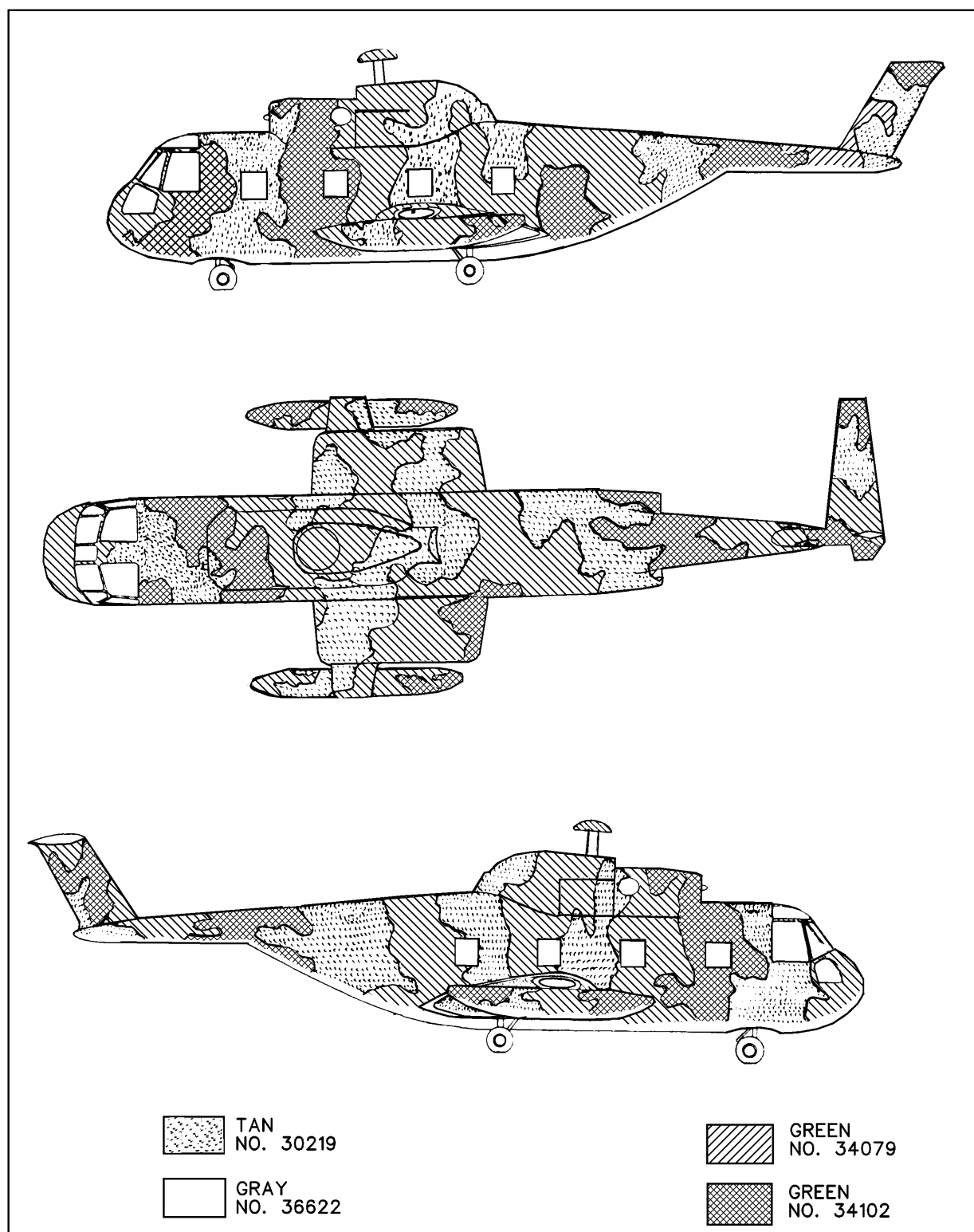


Figure D-21. H-3 Aircraft Camouflage Pattern

TO 1-1-4

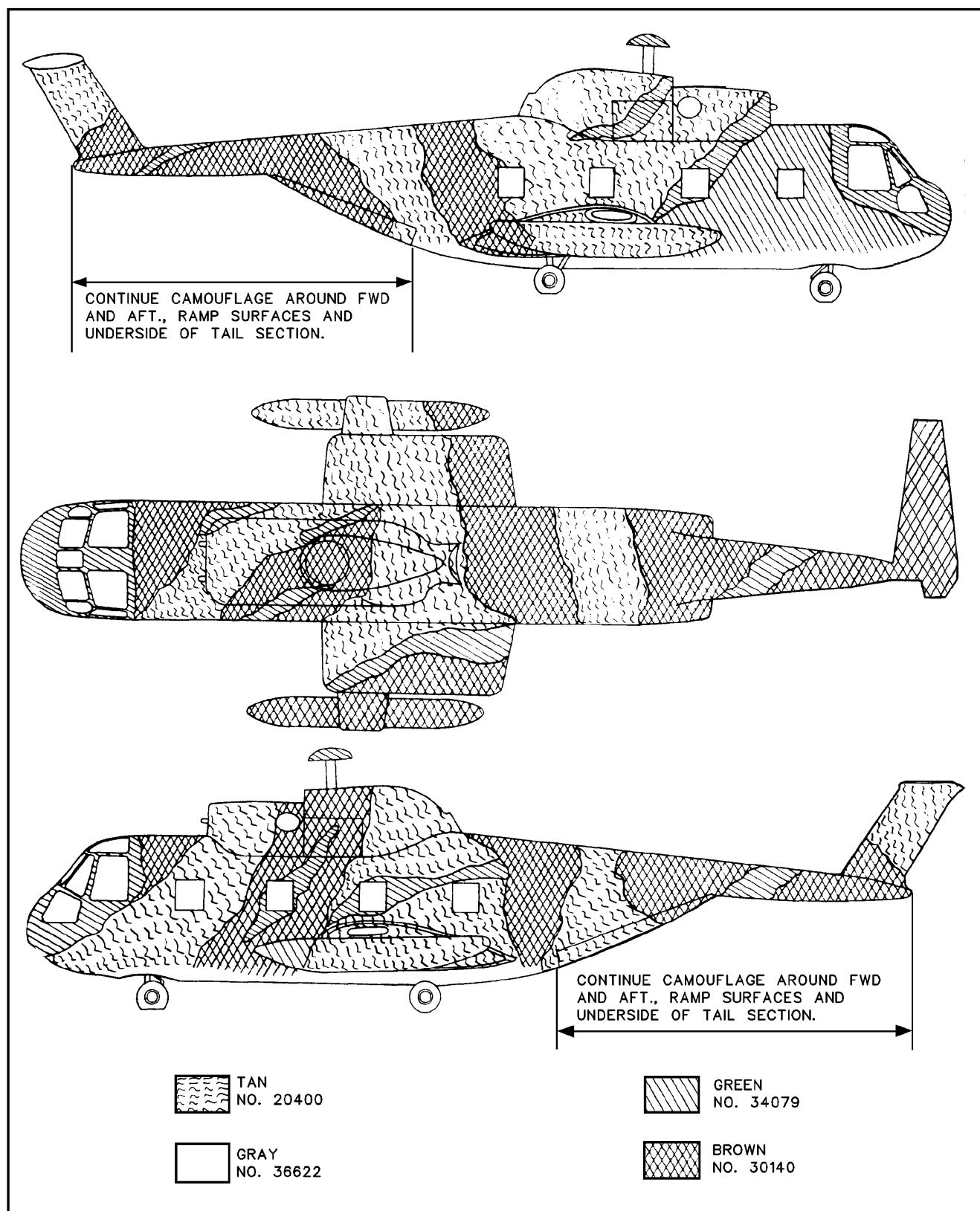


Figure D-22. CH-3 Aircraft Camouflage Pattern

MAIN AND TAIL ROTOR BLADES—FLAT BLACK, COLOR NO. 37038. PAINT AT DEPOT ONLY. FIELD MAINTENANCE PAINTING LIMITED TO TOUCH-UP REPAIR.

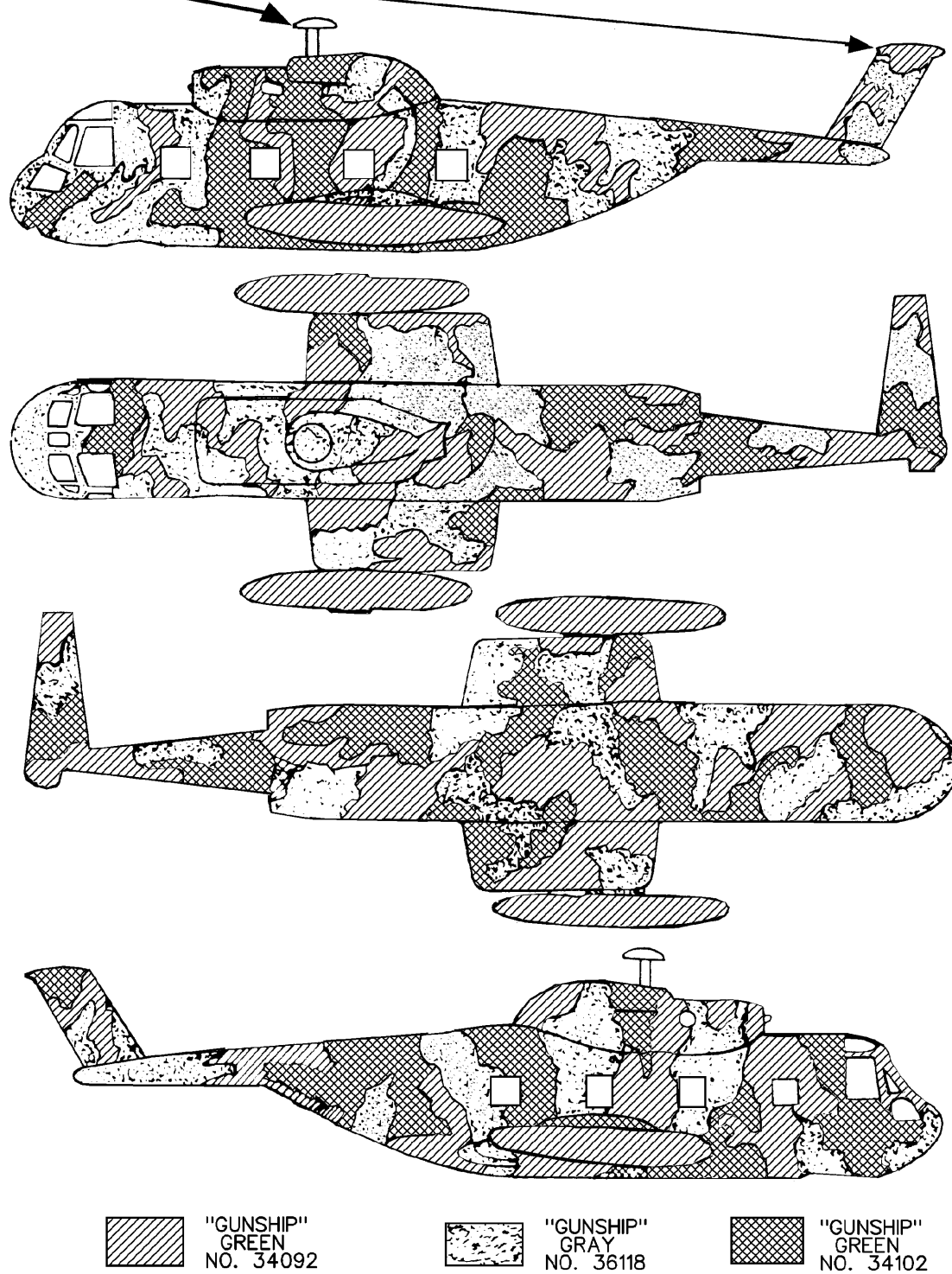


Figure D-23. CH-3 Aircraft European I Camouflage Pattern

TO 1-1-4

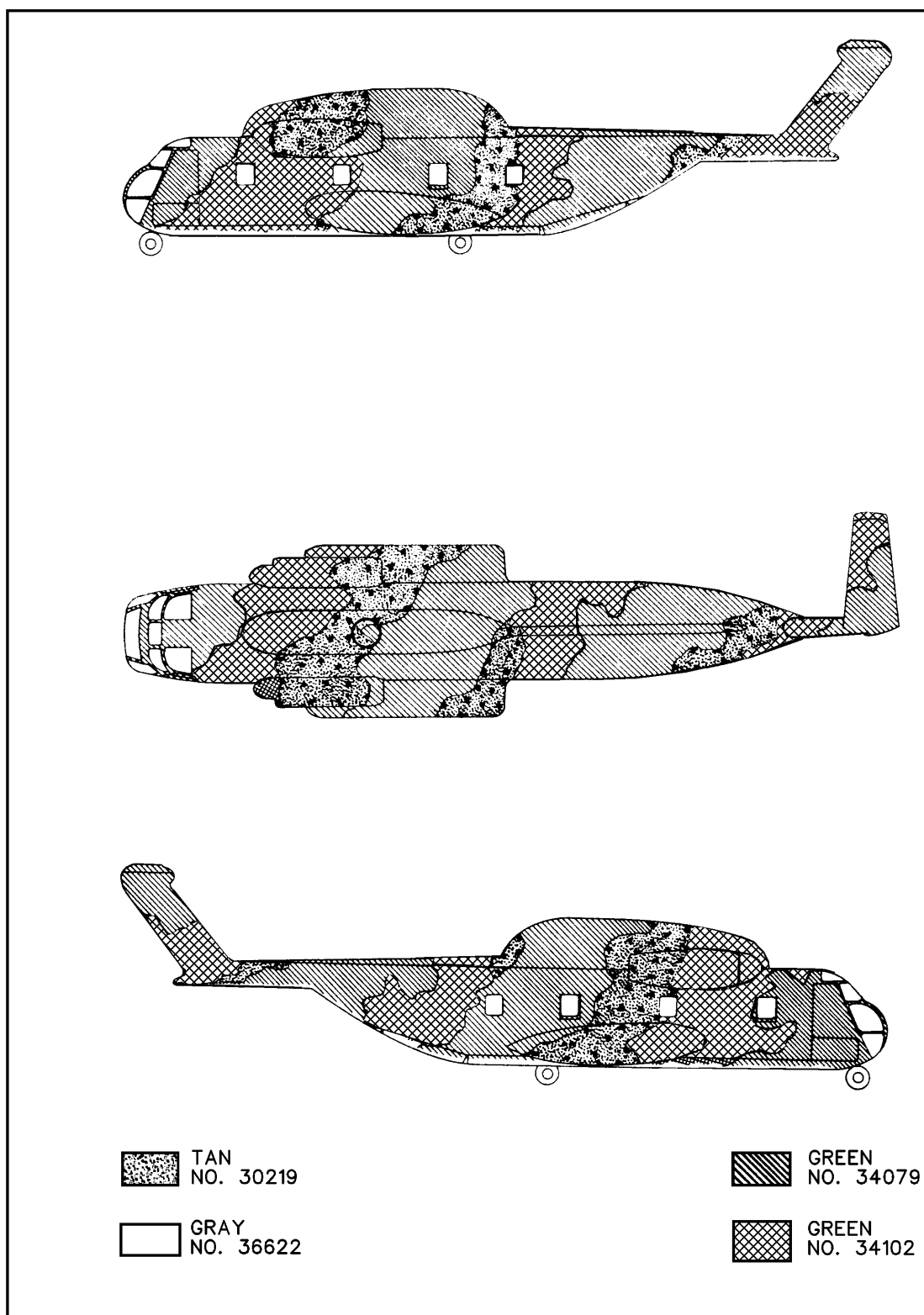


Figure D-24. H-53 Aircraft Standard Camouflage Pattern

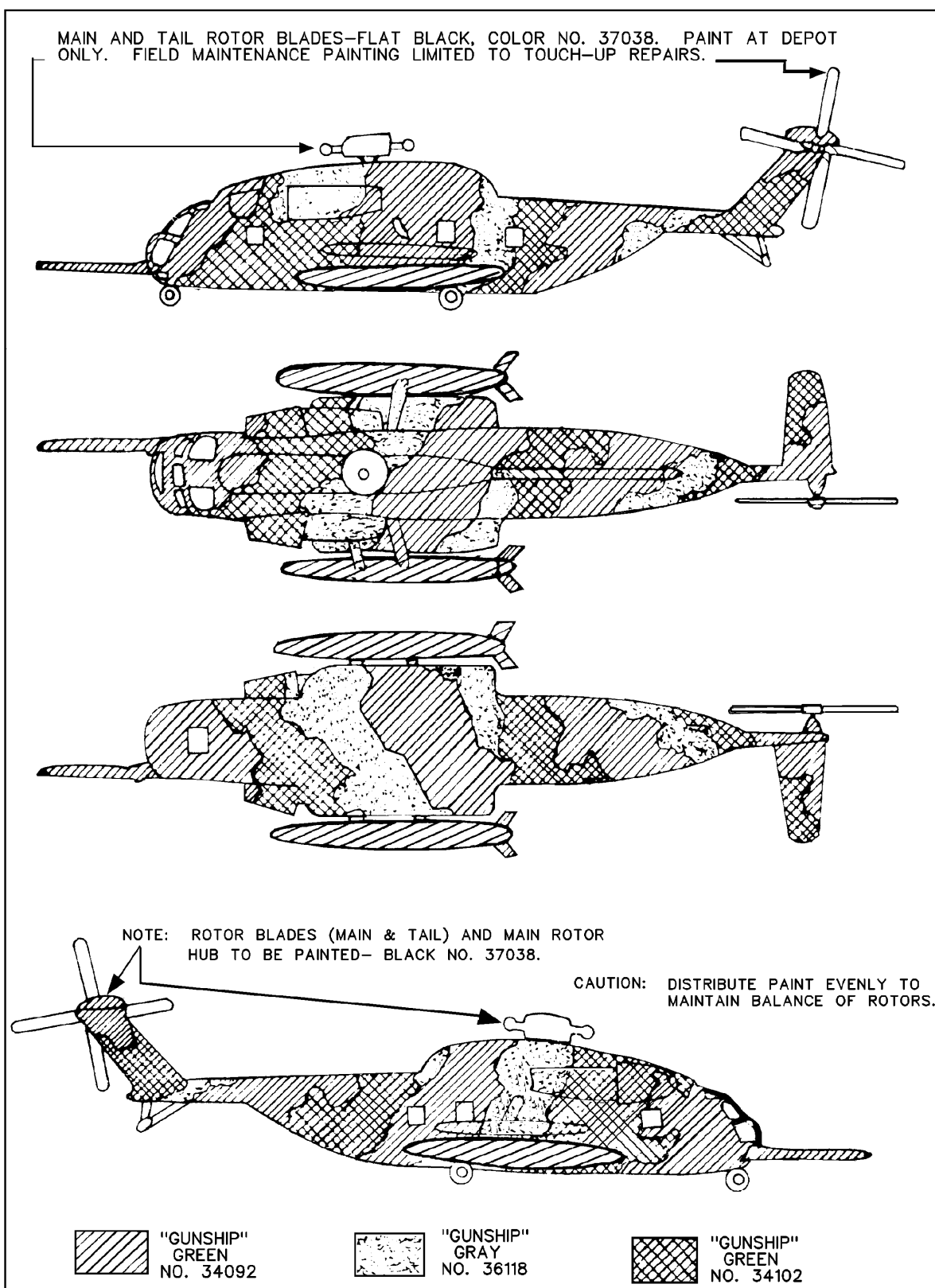


Figure D-25. H-53 Aircraft European I Camouflage Pattern



TO 1-1-4

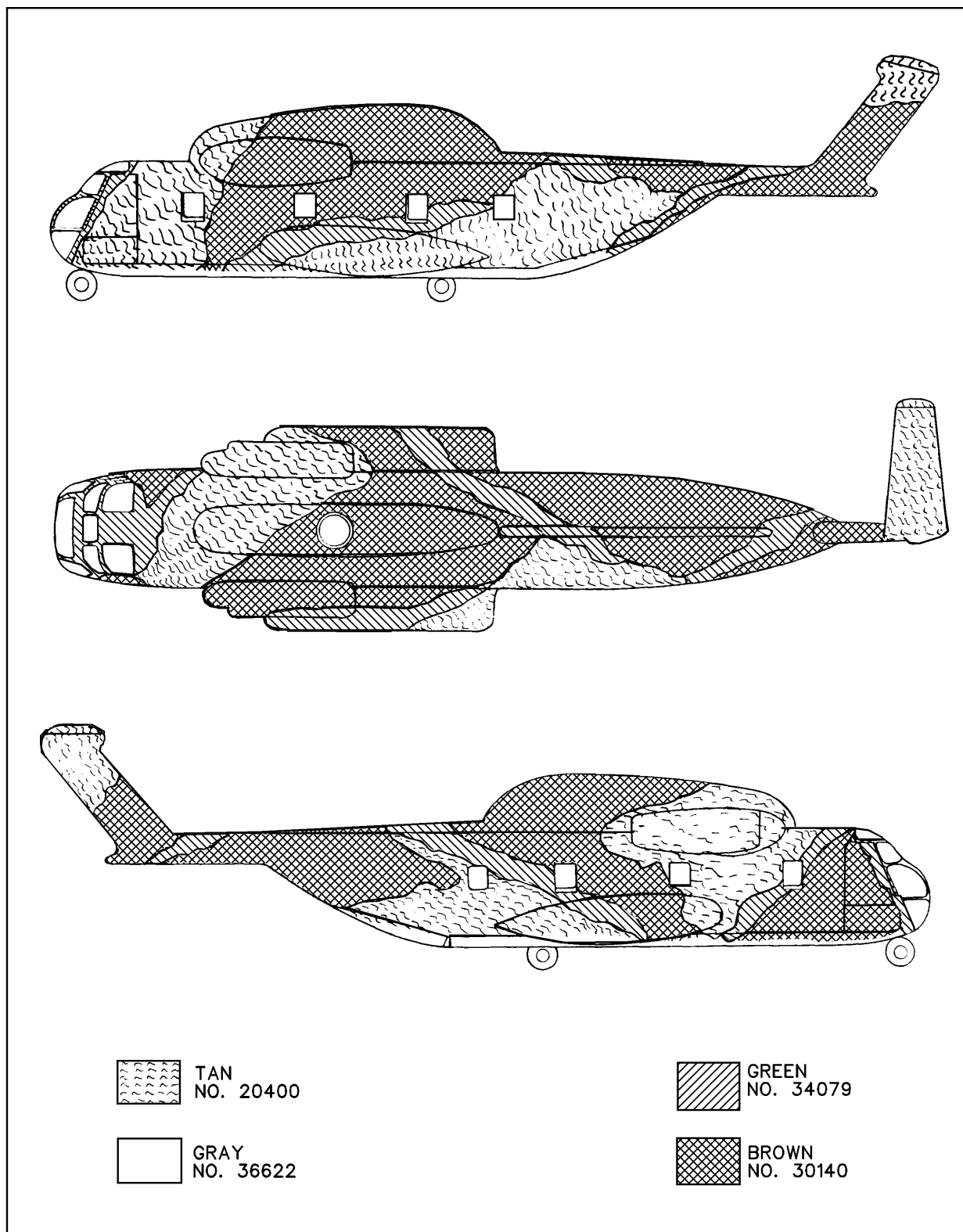


Figure D-26. HH-53B Helicopter Camouflage Pattern

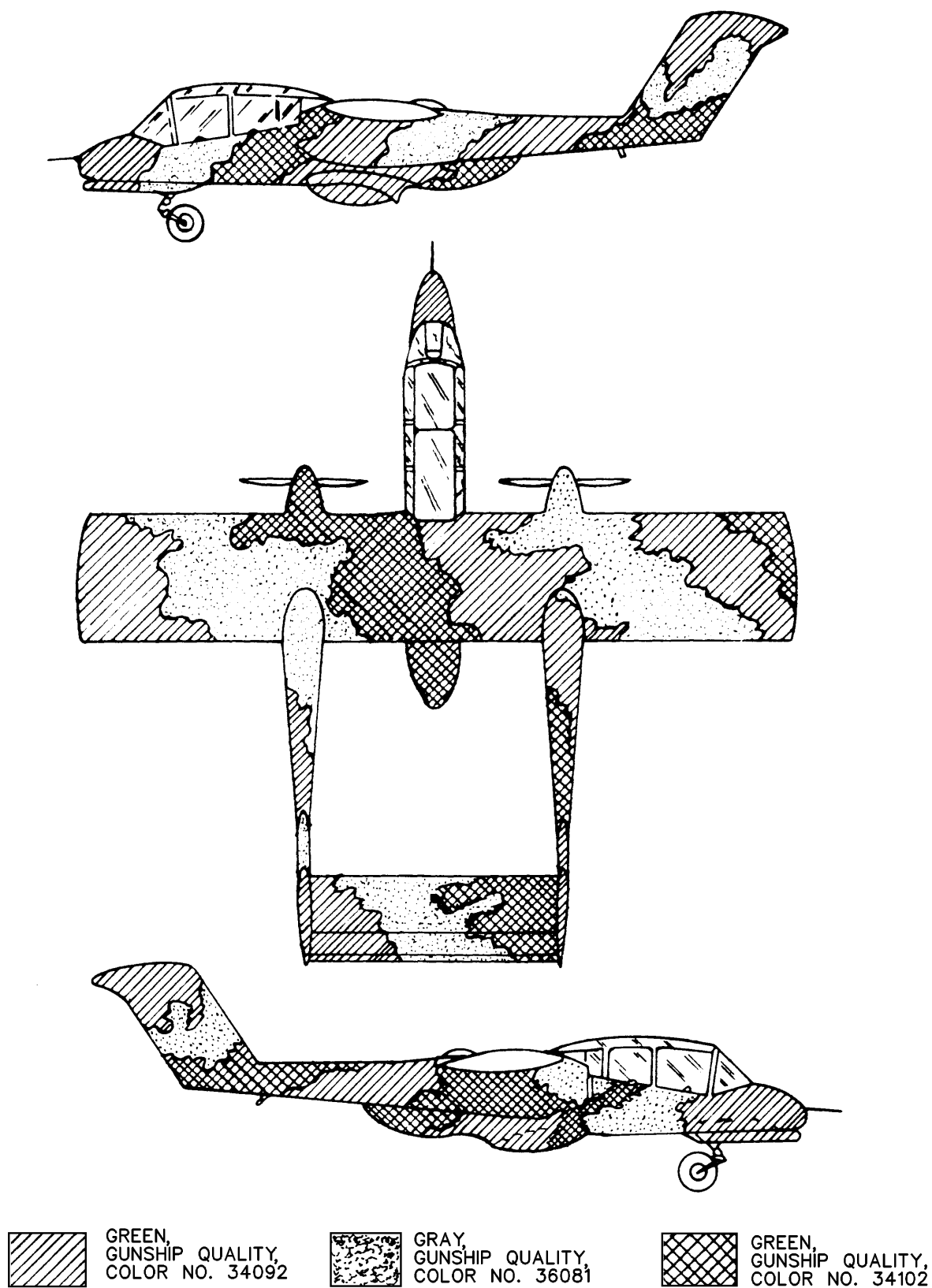
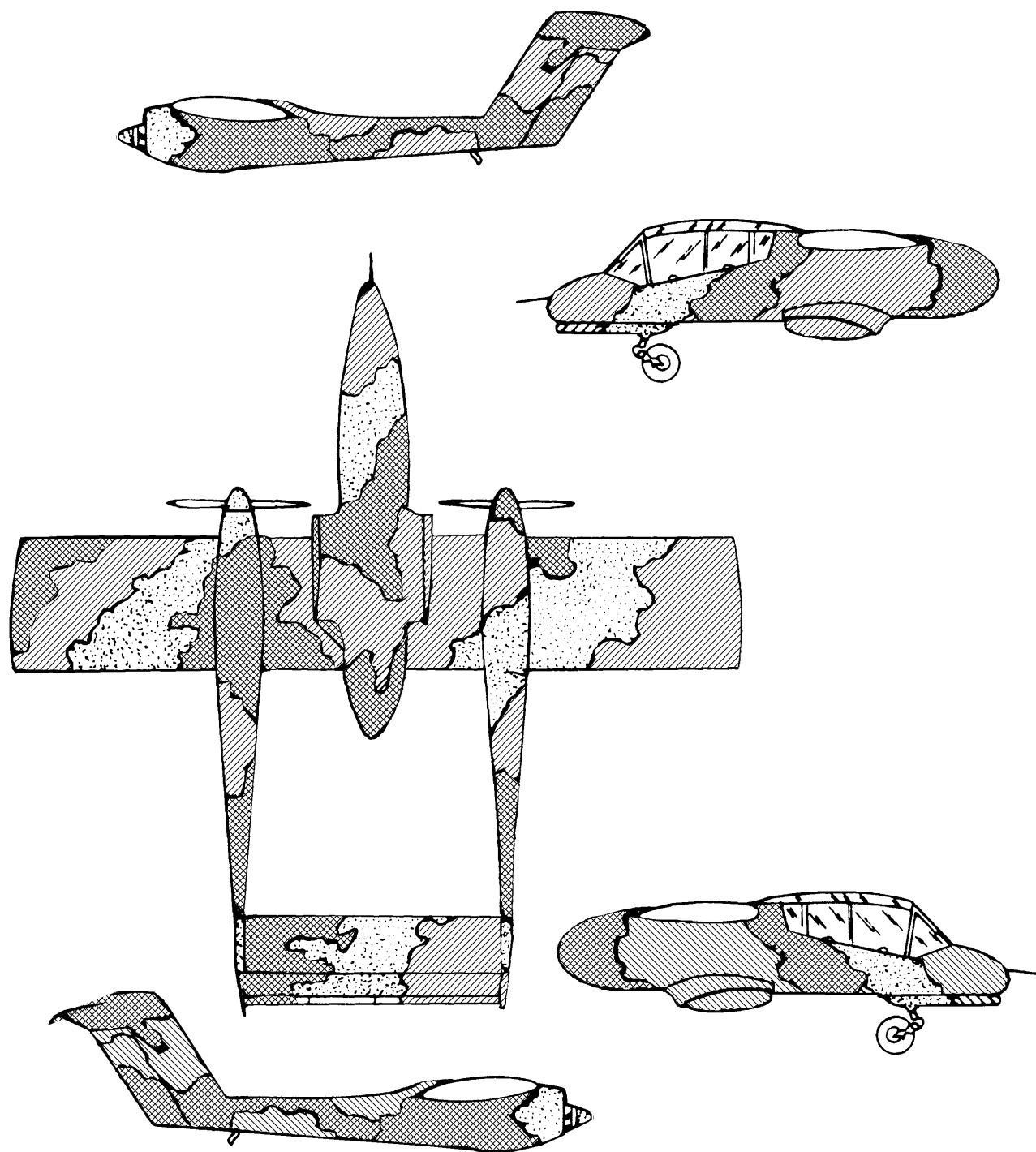


Figure D-27. OV-10 Aircraft Europe-I Camouflage Pattern (Sheet 1 of 2)



TO 1-1-4



 GREEN,  
GUNSHIP QUALITY,  
COLOR NO. 34092

 GRAY,  
GUNSHIP QUALITY,  
COLOR NO. 36081

 GREEN,  
GUNSHIP QUALITY,  
COLOR NO. 34102

Figure D-27. OV-10 Aircraft Europe-I Camouflage Pattern (Sheet 2 of 2)

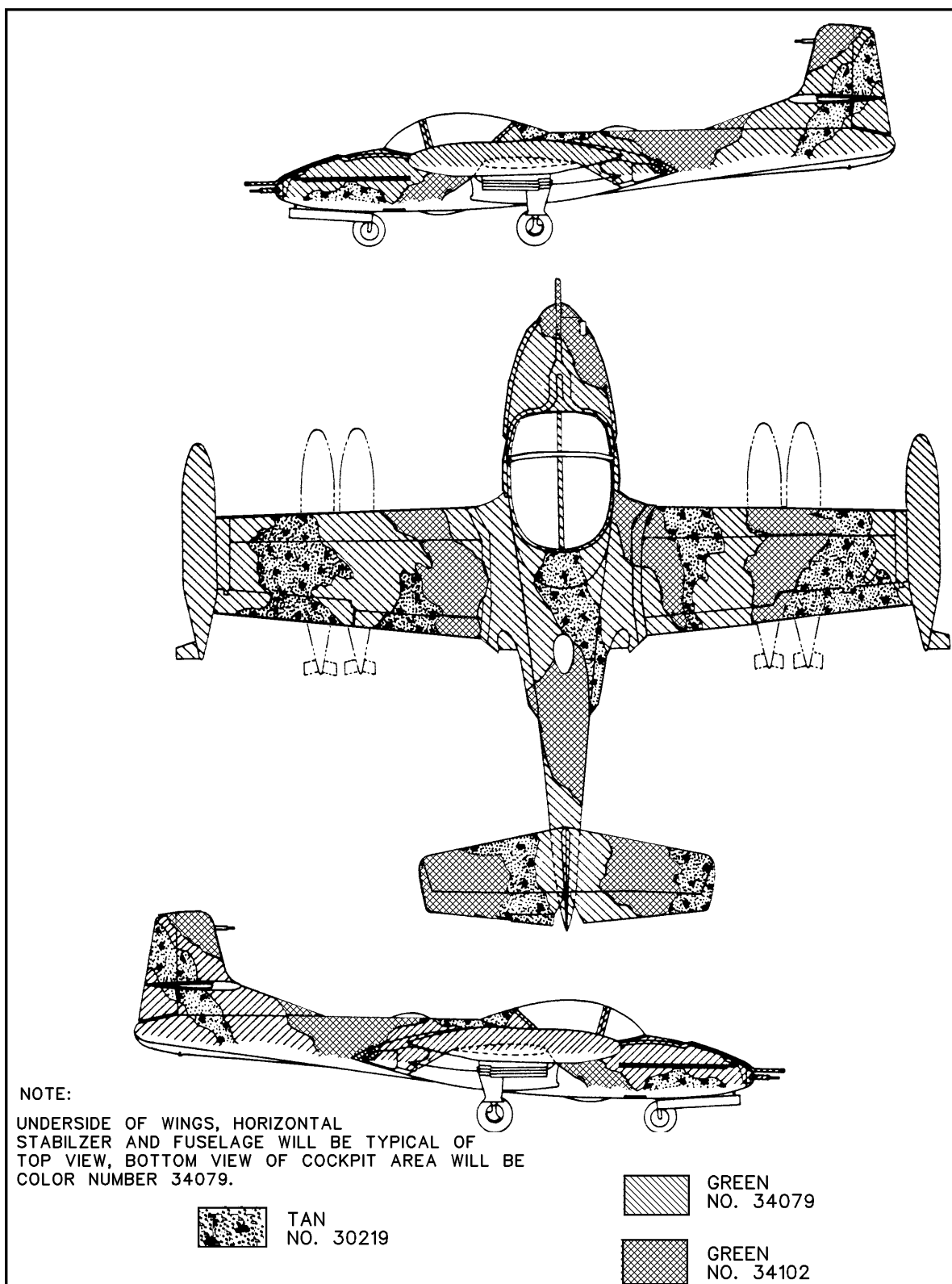
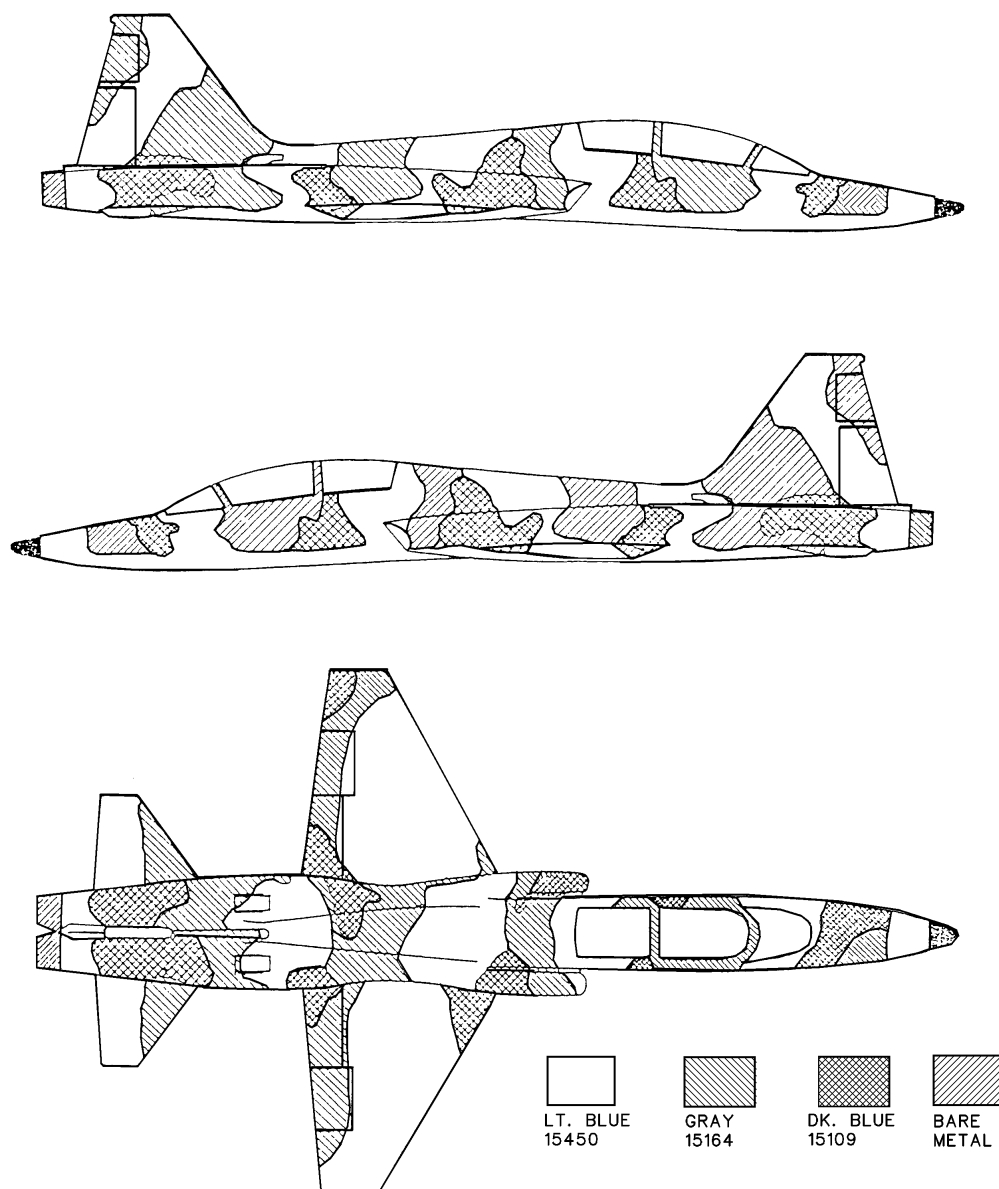


Figure D-28. A-37/OA-37 Aircraft Standard Camouflage Pattern

TO 1-1-4



- NOTES: 1. COLORS 15450, 15164, AND 15109 SHOULD MEET MIL-C-83286 OR MIL-C-85285.
2. COLOR 17875/17925 SHOULD MEET TT-L-32, MIL-C-83286 OR MIL-C-85285 ( FOR GEARS/WHEELWELLS).
3. EPOXY PRIMER USED SHOULD MEET MIL-P-23377.

Figure D-29. AT-38B Aircraft Camouflage Pattern (Sheet 1 of 3)

- NOTES: 1. COLORS 15450, 15164, AND 15109 SHOULD MEET MIL-C-83286 OR MIL-C-85285.
2. COLOR 17875/17925 SHOULD MEET TT-L-32, MIL-C-83286 OR MIL-C-85285 ( FOR GEARS/WHEELWELLS).
3. EPOXY PRIMER USED SHOULD MEET MIL-P-23377.

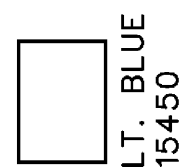
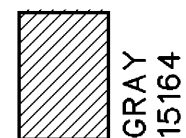
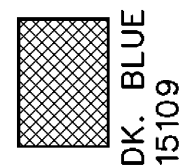
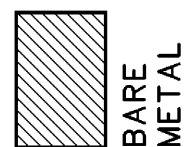
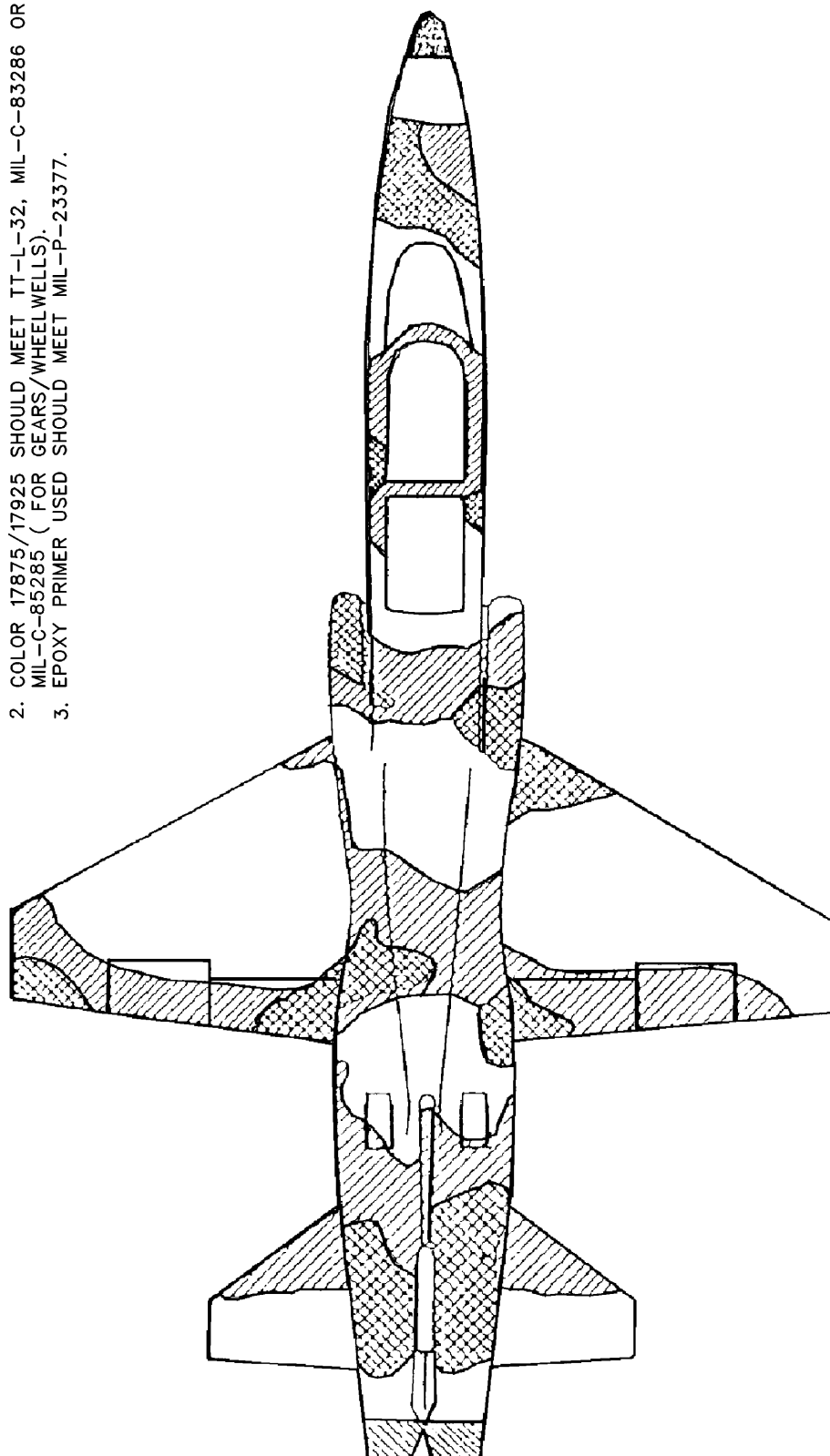


Figure D-29. AT-38B Aircraft Camouflage Pattern (Sheet 2 of 3)

TO 1-1-4

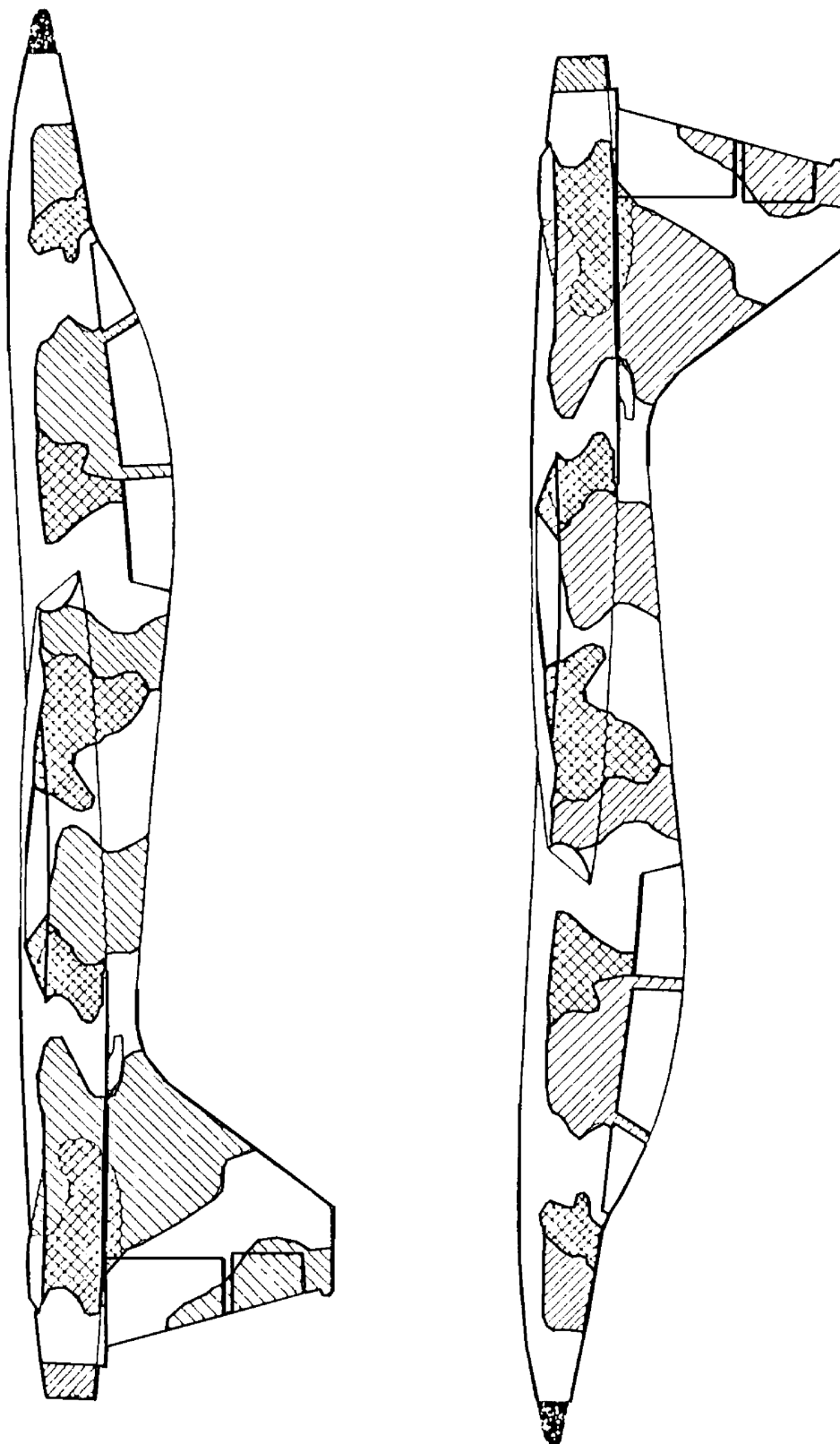


Figure D-29. AT-38B Aircraft Camouflage Pattern (Sheet 3 of 3)

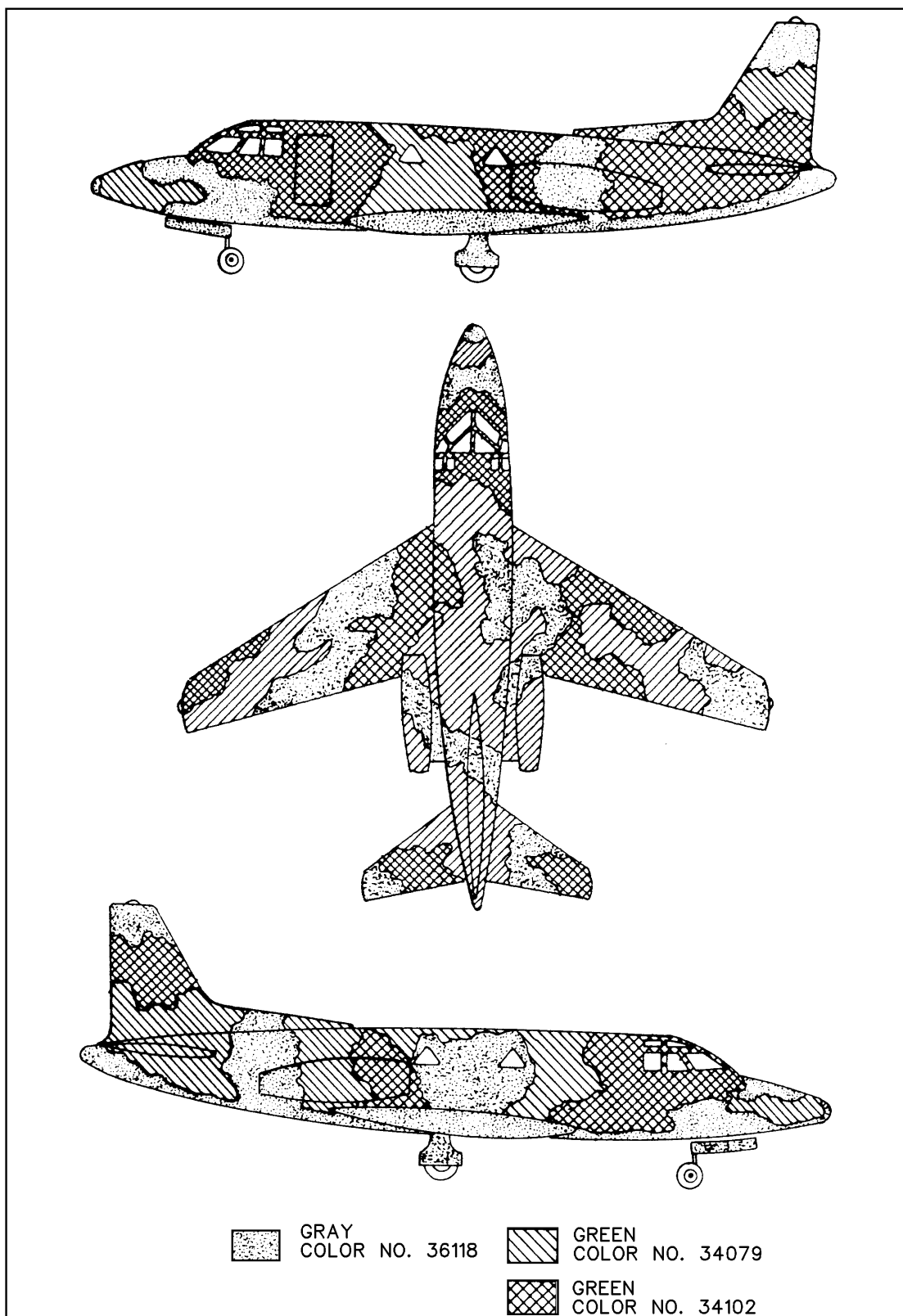


Figure D-30. T-39 Aircraft Camouflage Pattern

TO 1-1-4

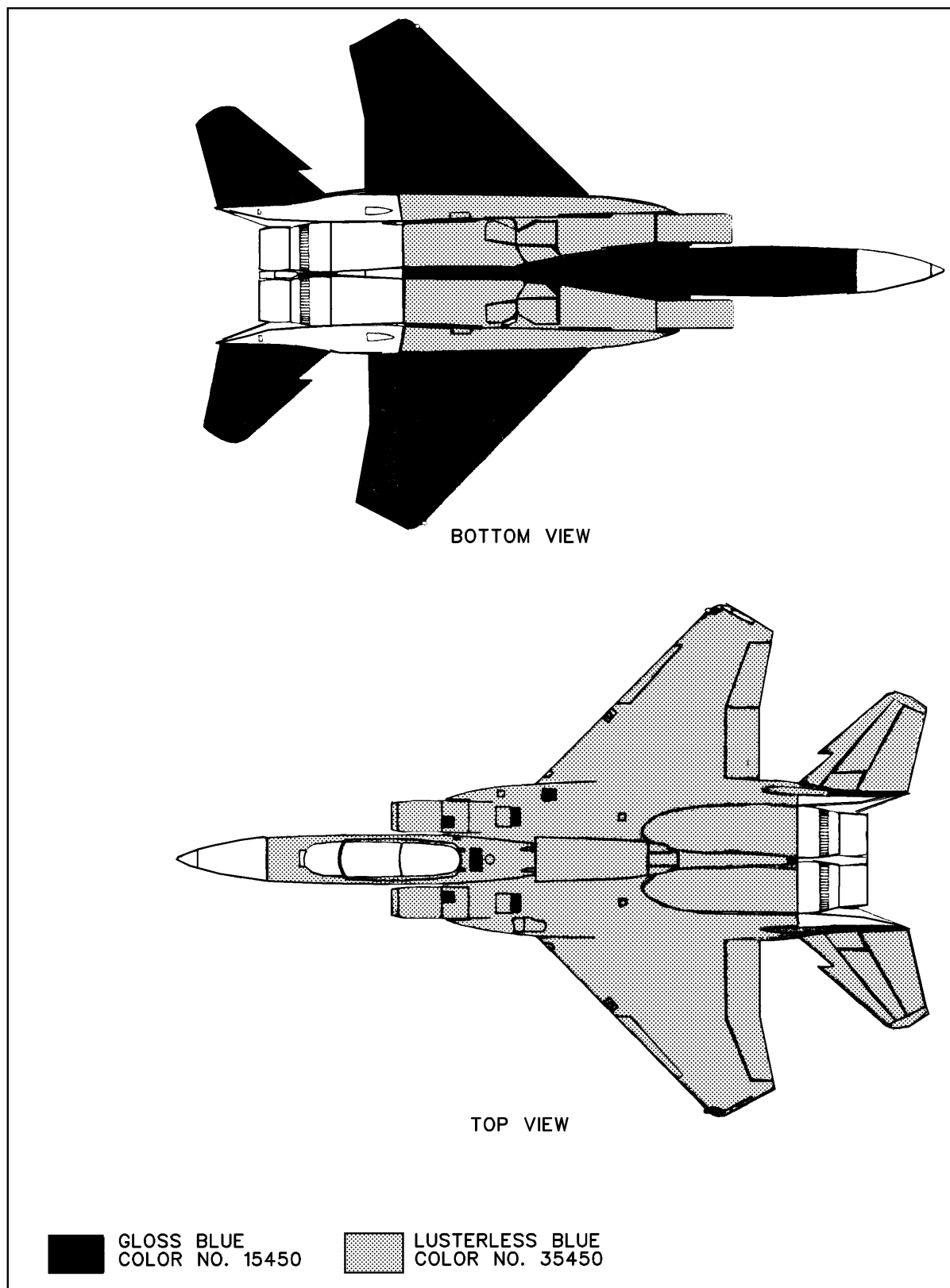


Figure D-31. F/TF-15 Aircraft Camouflage Pattern for Air Superior Blue

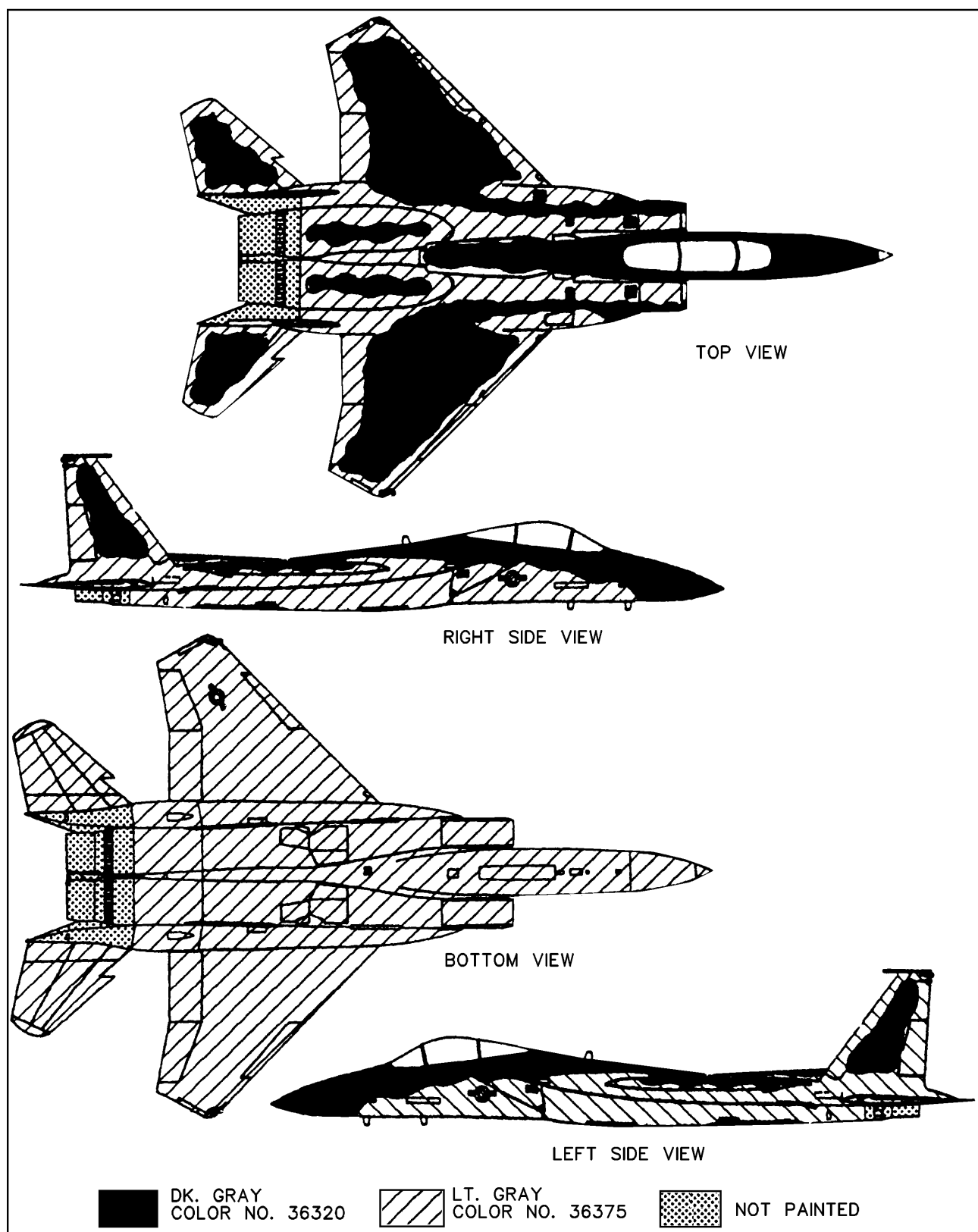


Figure D-32. F/TF-15 Aircraft Camouflage Pattern for High and Low Reflectance Gray (Sheet 1 of 2)



TO 1-1-4

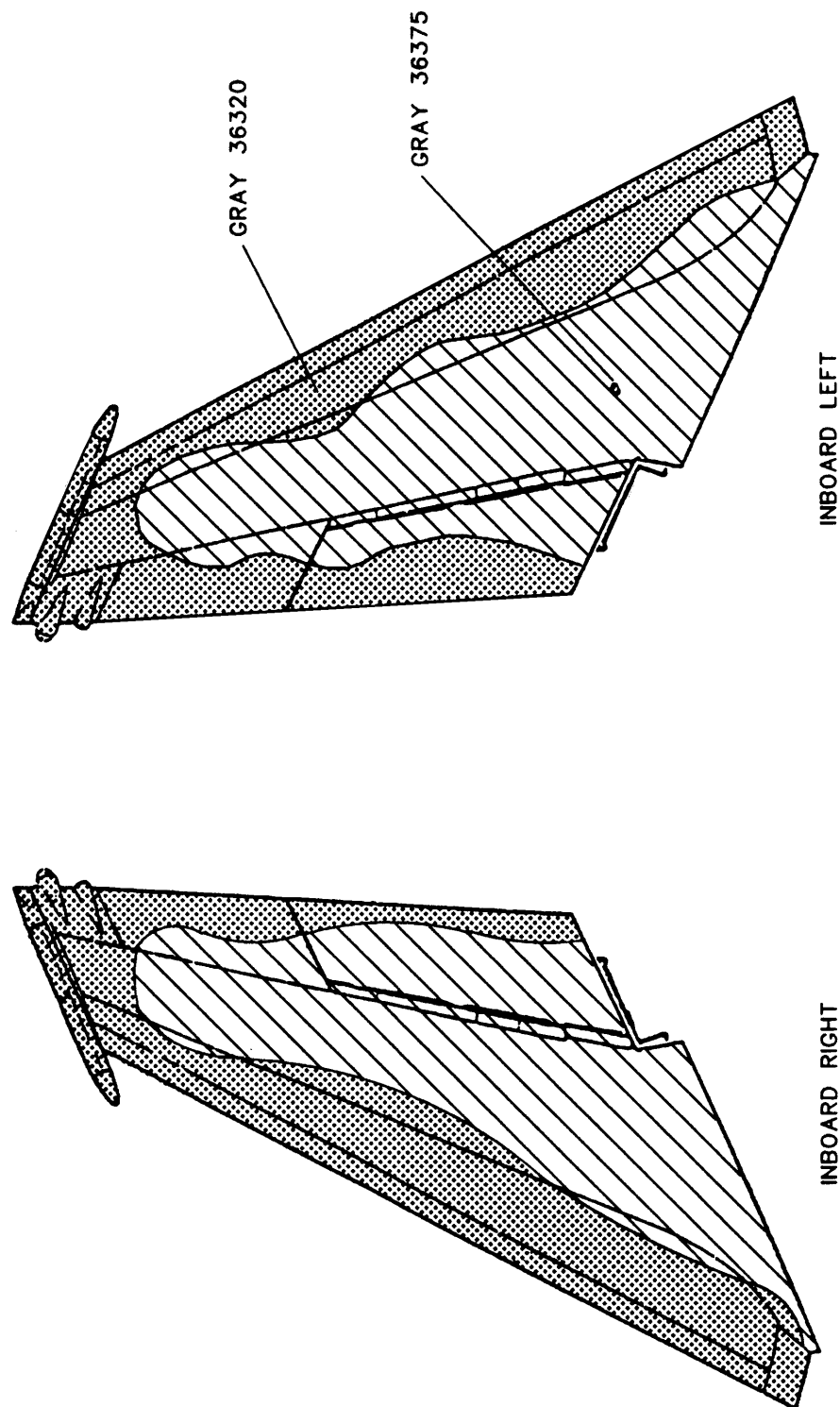


Figure D-32. F/TF-15 Aircraft Camouflage Pattern for High and Low Reflectance Gray (Sheet 2 of 2)

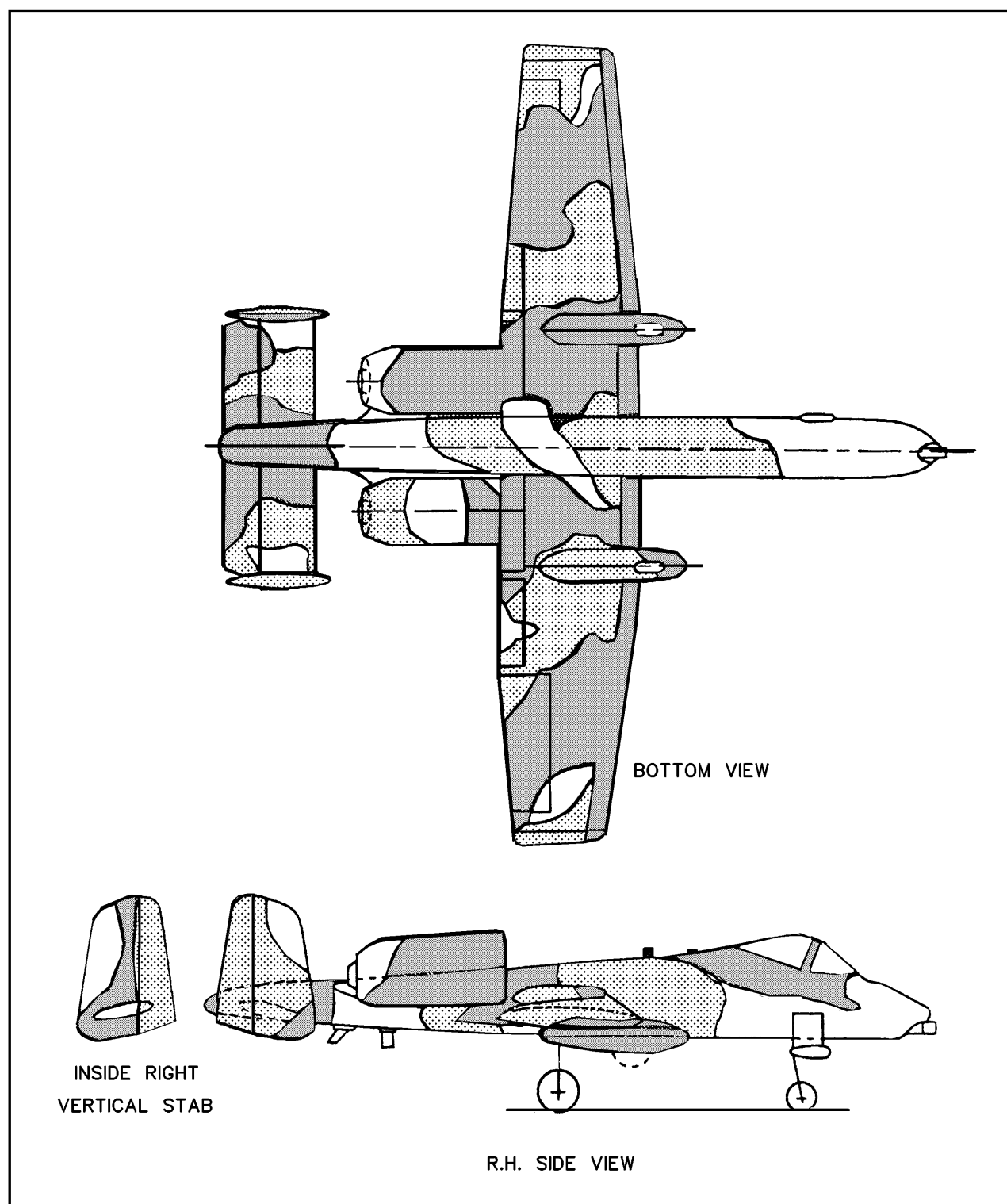


Figure D-33. A-10 Aircraft Camouflage Pattern "European I" (Sheet 1 of 2)

TO 1-1-4

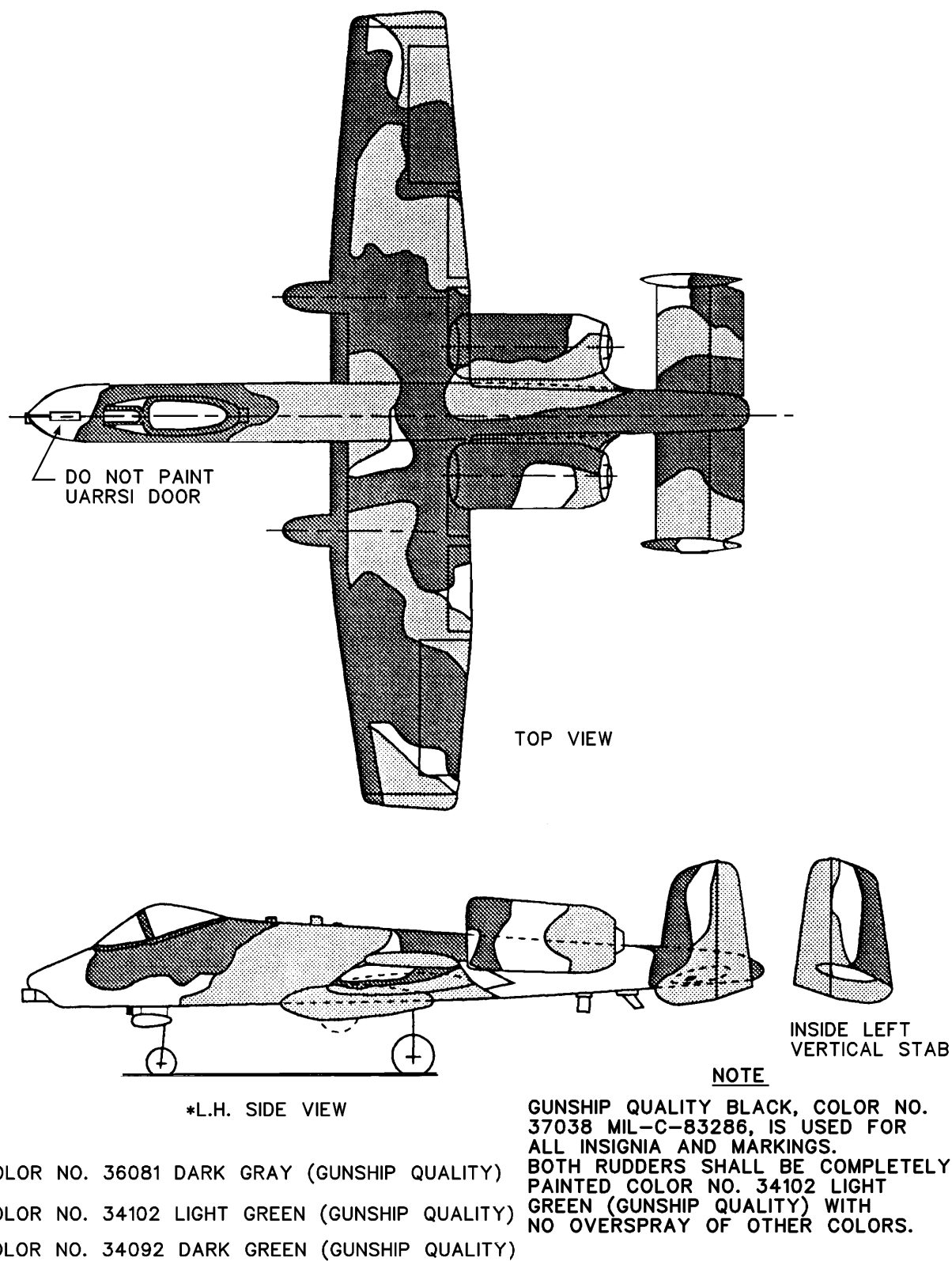
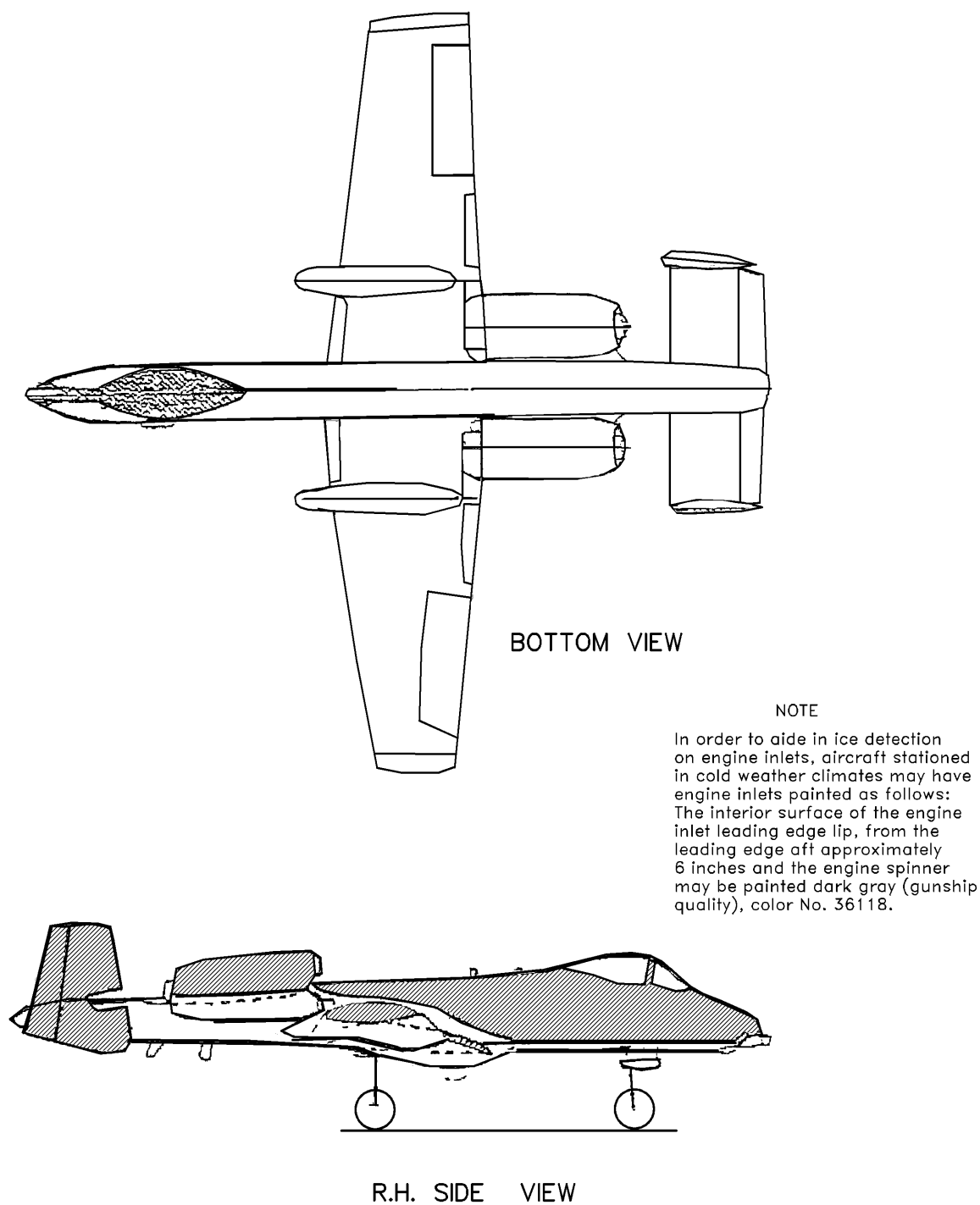


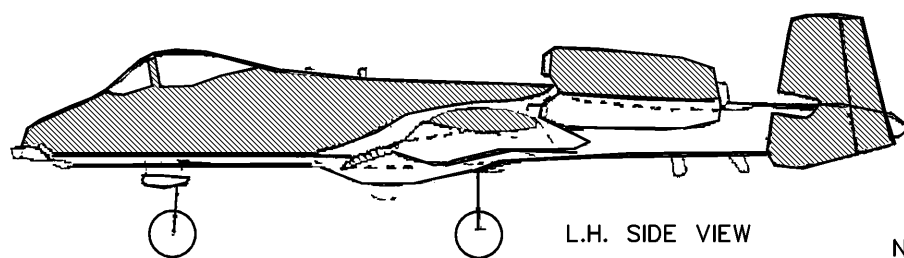
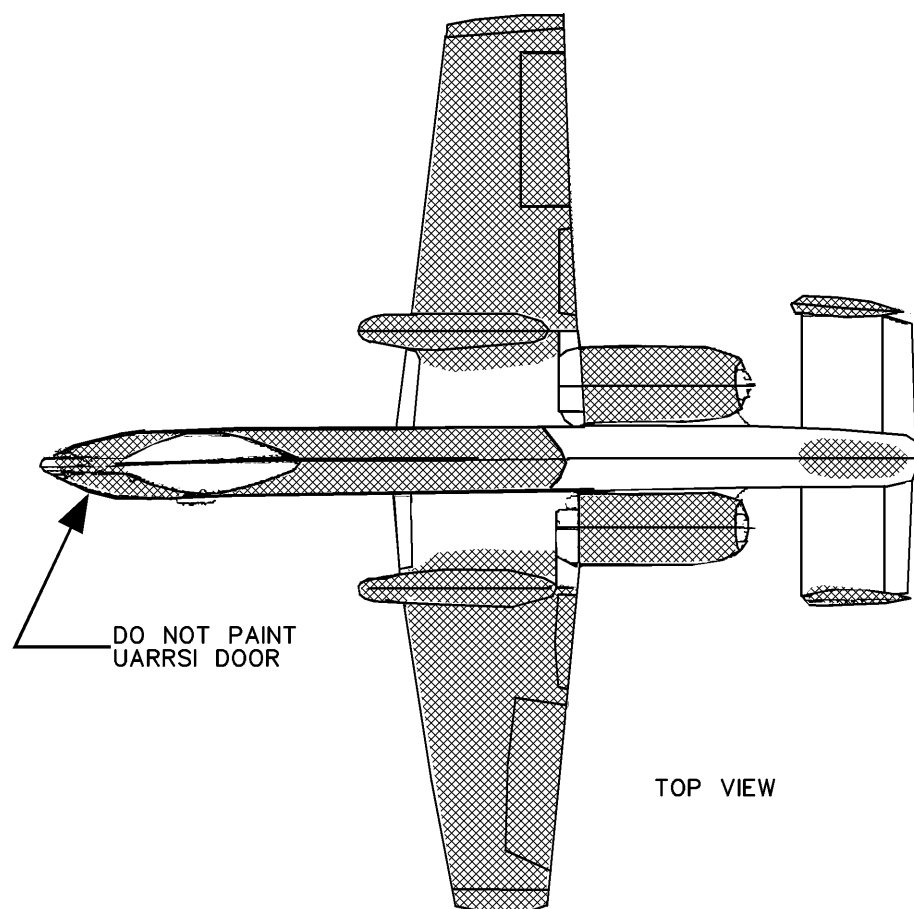
Figure D-33. A-10 Aircraft Camouflage Pattern "European I" (Sheet 2 of 2)






L9400344

Figure D-34. A-10 Aircraft Camouflage Pattern for High and Low Reflectance Gray (Sheet 1 of 2)

TO 1-1-4



APPLICATION KEY

- |   |   |
|---|---|
|  | COLOR NO. 36375 LIGHT GRAY (GUNSHIP QUALITY)          |
|  | COLOR NO. 36320 DARK GRAY (GUNSHIP QUALITY)           |
|  | COLOR NO. 36118 DARK GRAY LOW GLOSS (GUNSHIP QUALITY) |

NOTE

GUNSHIP QUALITY BLACK  
COLOR NO. 37038 MIL-C-  
83286/MIL-C-85285 IS  
USED FOR ALL INSIGNIAS  
AND MARKINGS.

Figure D-34. A-10 Aircraft Camouflage Pattern for High and Low Reflectance Gray (Sheet 2 of 2)

TABLE D-1

*DISTINCTIVE UNIT MARKINGS, SIZES AND LOCATIONS, CAMOUFLAGED AIRCRAFT**(Figures D-35 through D-38 are standard size markings to be used.)*

<u>AIRCRAFT MODEL</u>	<u>FIGURE REFERENCE</u>
Typical Distinctive Unit Aircraft Identification Markings.....	D-35
Typical Distinctive Unit Aircraft Identification, 24" Letter Sizes.....	D-36
Typical Distinctive Unit Aircraft Identification, 36" Letter Sizes.....	D-37
Typical Distinctive Unit Aircraft Serial Number, 15" Size .....	D-38
Distinctive Unit and Serial Number Sizes C-130 Aircraft .....	D-39
Distinctive Unit and Serial Number Sizes UH-1F Aircraft .....	D-40
Distinctive Unit and Serial Number Sizes F/RF-4 Aircraft .....	D-41
Distinctive Unit and Serial Number Sizes F/TF-15 Aircraft .....	D-42
Distinctive Unit and Serial Number Sizes F-16 Aircraft .....	D-43
Distinctive Unit and Serial Number Sizes A-10 Aircraft .....	D-44

TO 1-1-4

*DISTINCTIVE UNIT AIRCRAFT IDENTIFICATION MARKINGS*

## IMPORTANT

*THE FOLLOWING INSTRUCTIONS FOR THE APPLICATION OF UNIT AIRCRAFT IDENTIFICATION MARKINGS ON THE VERTICAL STABILIZERS CAN VARY SLIGHTLY. IN NO INSTANCE WILL THESE MARKINGS BE APPLIED IN SUCH A LOCATION THAT WOULD INTERFERE WITH THE PERFORMANCE OF ANTENNAE OR OTHER EQUIPMENT INSTALLED ON THE EXTERIOR SURFACES OF THESE VERTICAL STABILIZERS.*

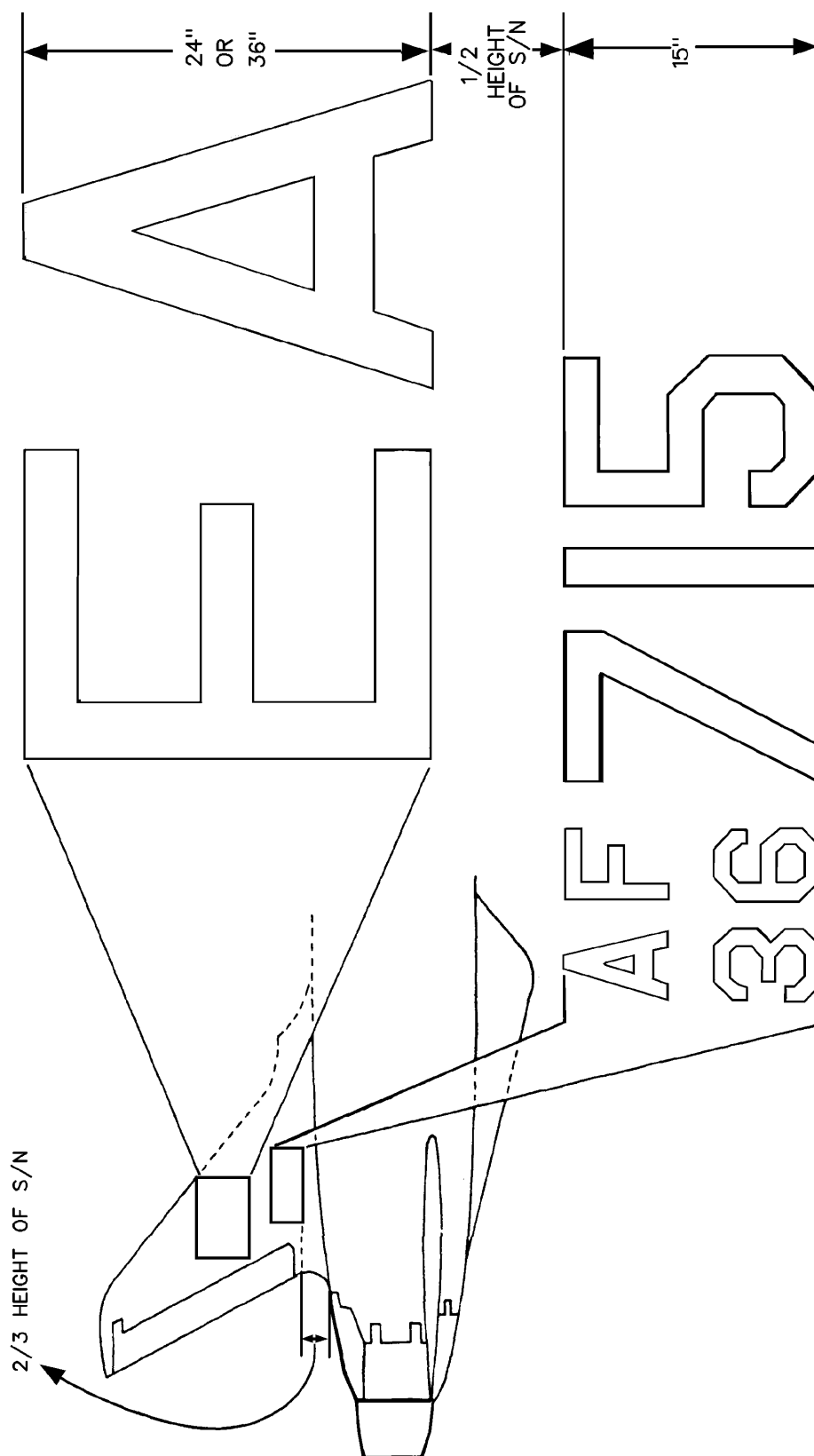


Figure D-35. Typical Distinctive Unit Aircraft Identification Markings



TO 1-1-4

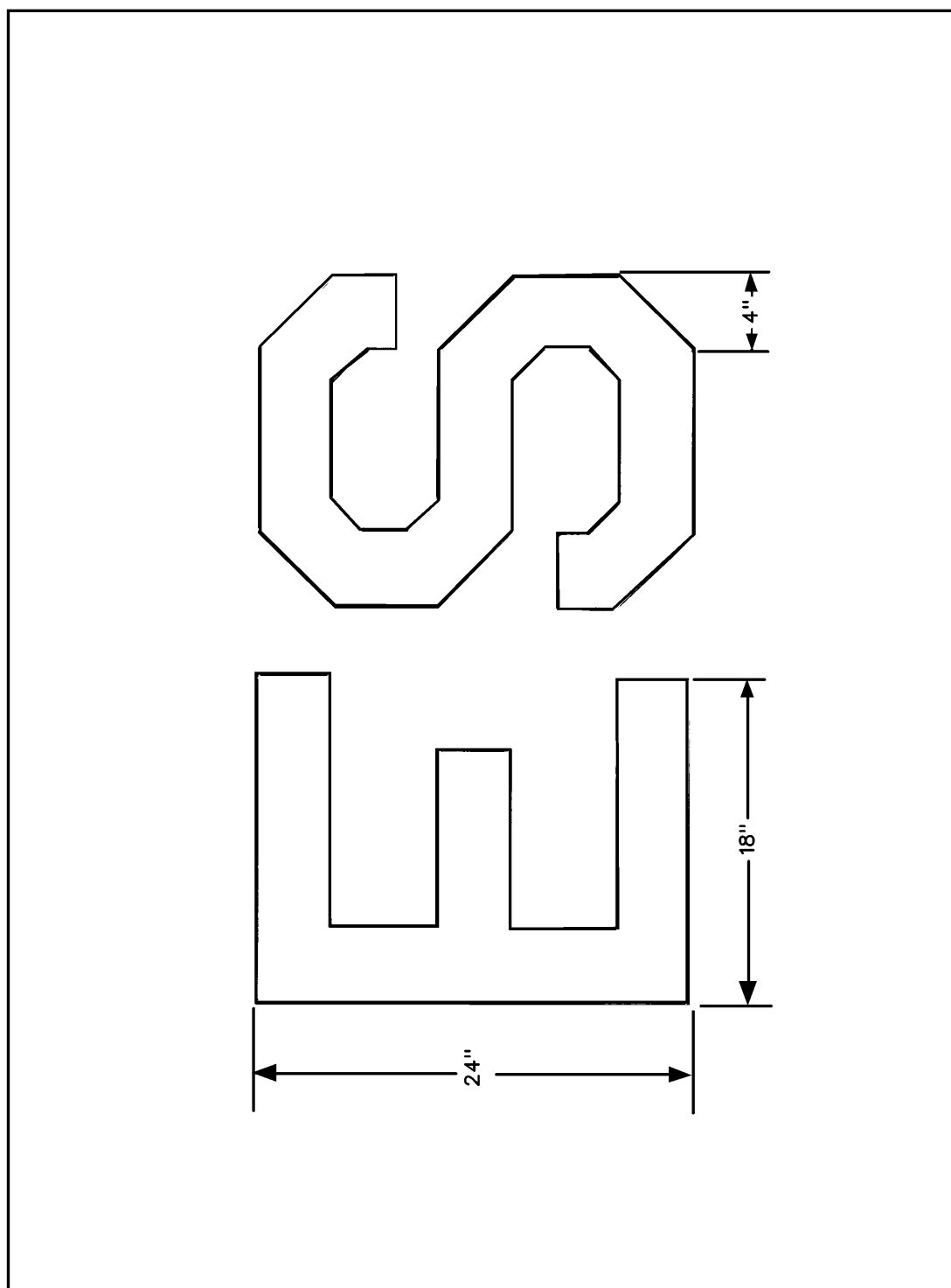


Figure D-36. Typical Distinctive Unit Aircraft Identification, 24" Letter Sizes

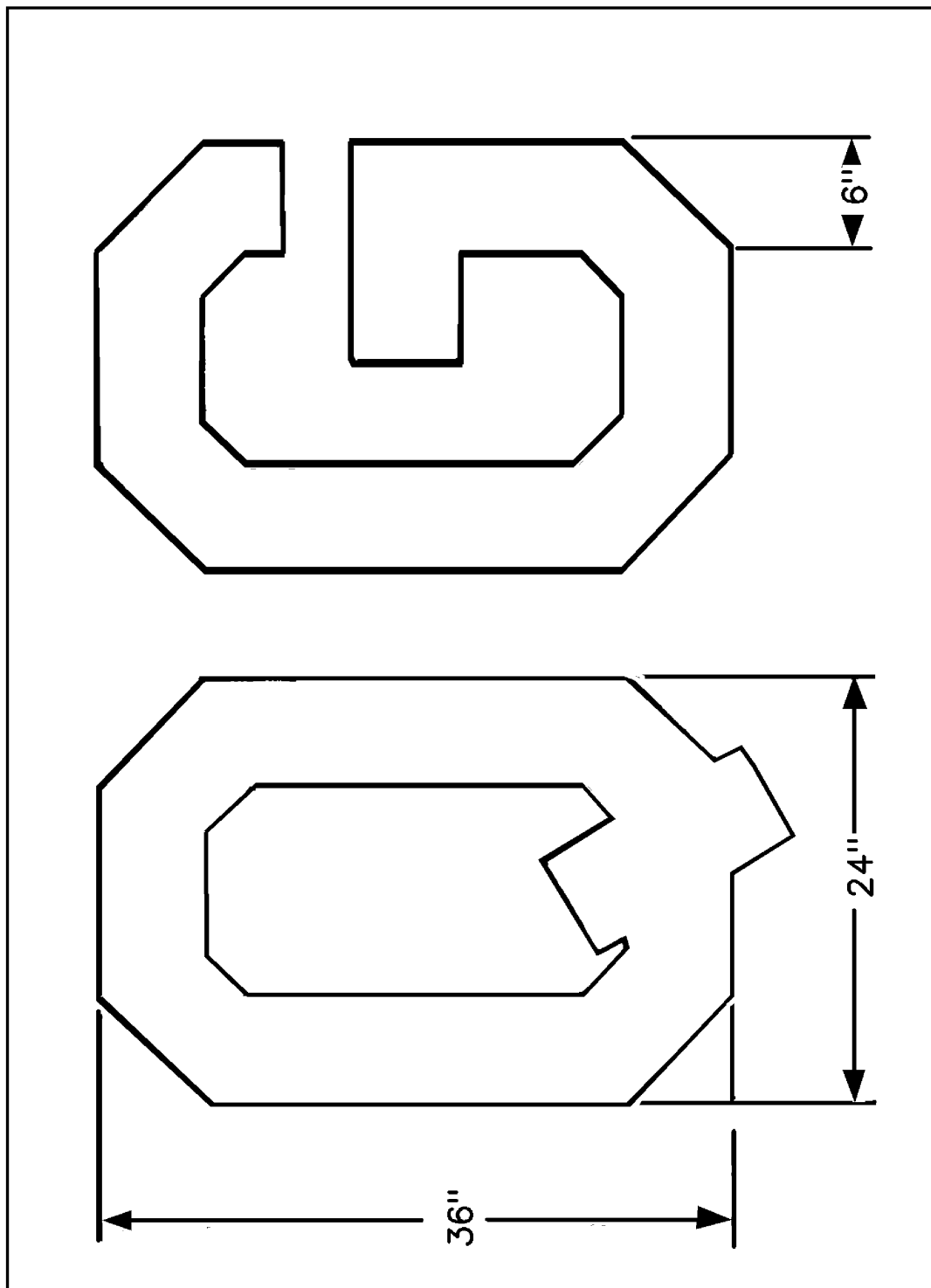


Figure D-37. Typical Distinctive Unit Aircraft Identification, 36" Letter Sizes

TO 1-1-4

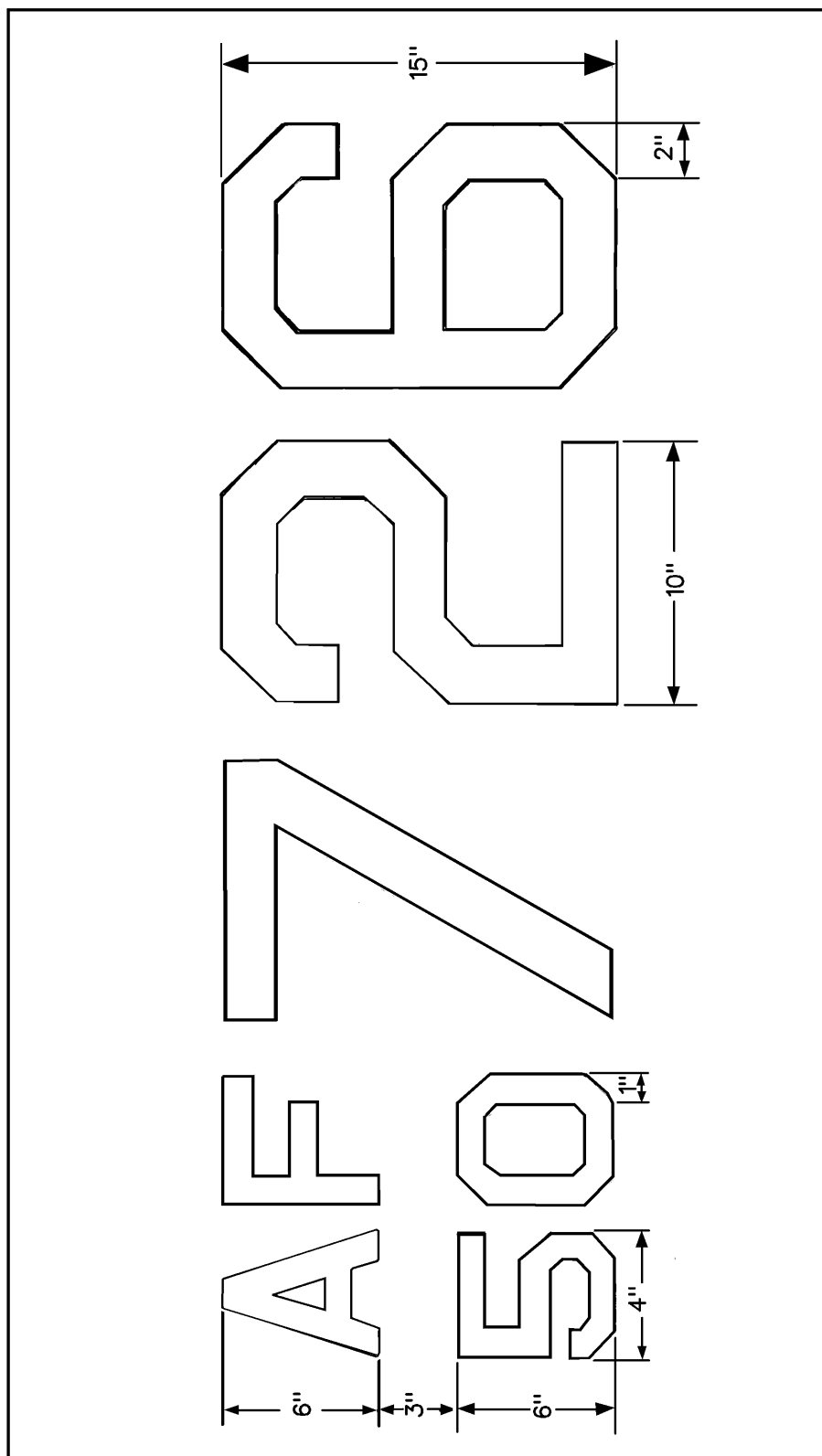


Figure D-38. Typical Distinctive Aircraft Serial Number, 15" Size

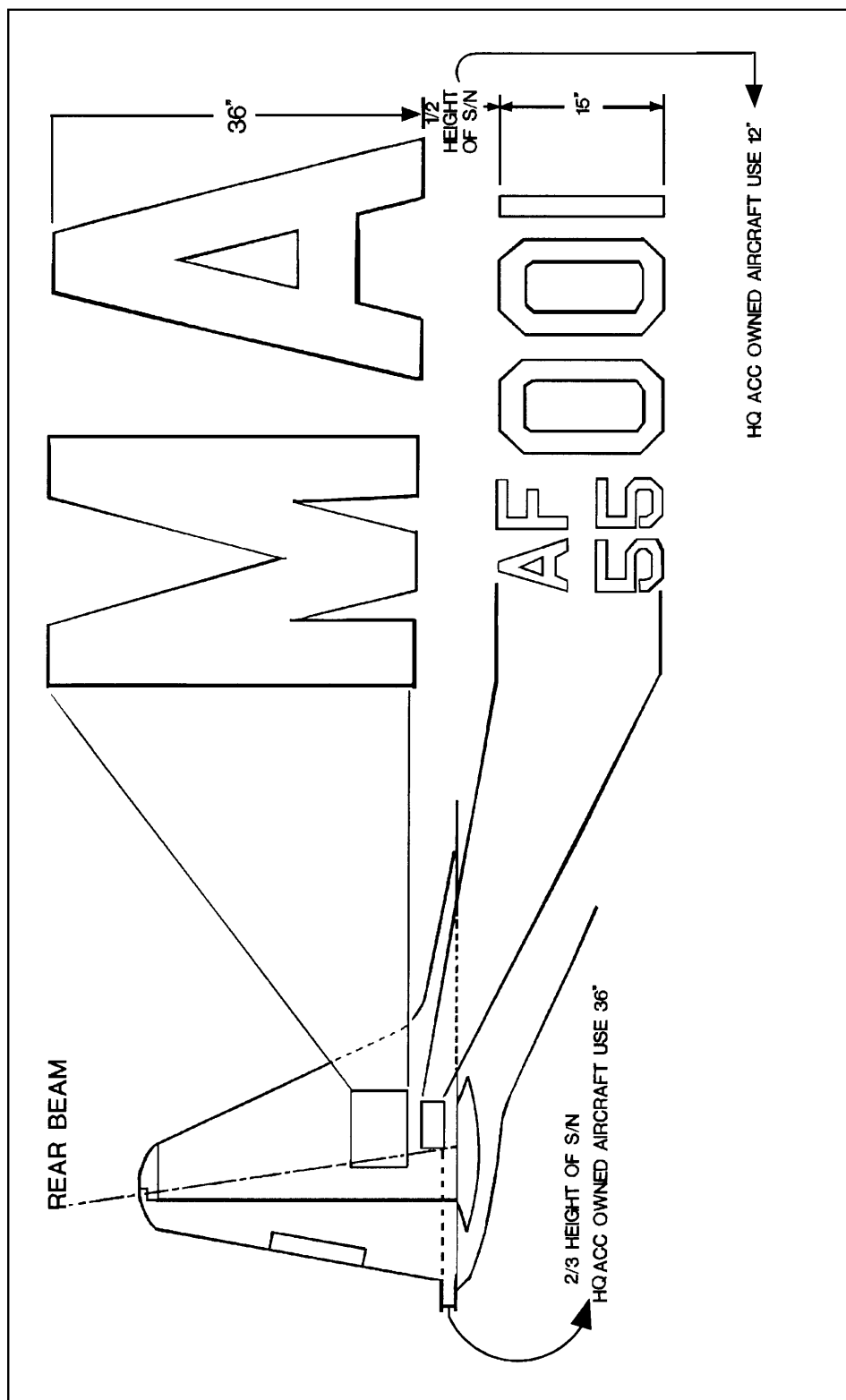


Figure D-39. Distinctive Unit and Serial Number Sizes C-130 Aircraft

TO 1-1-4

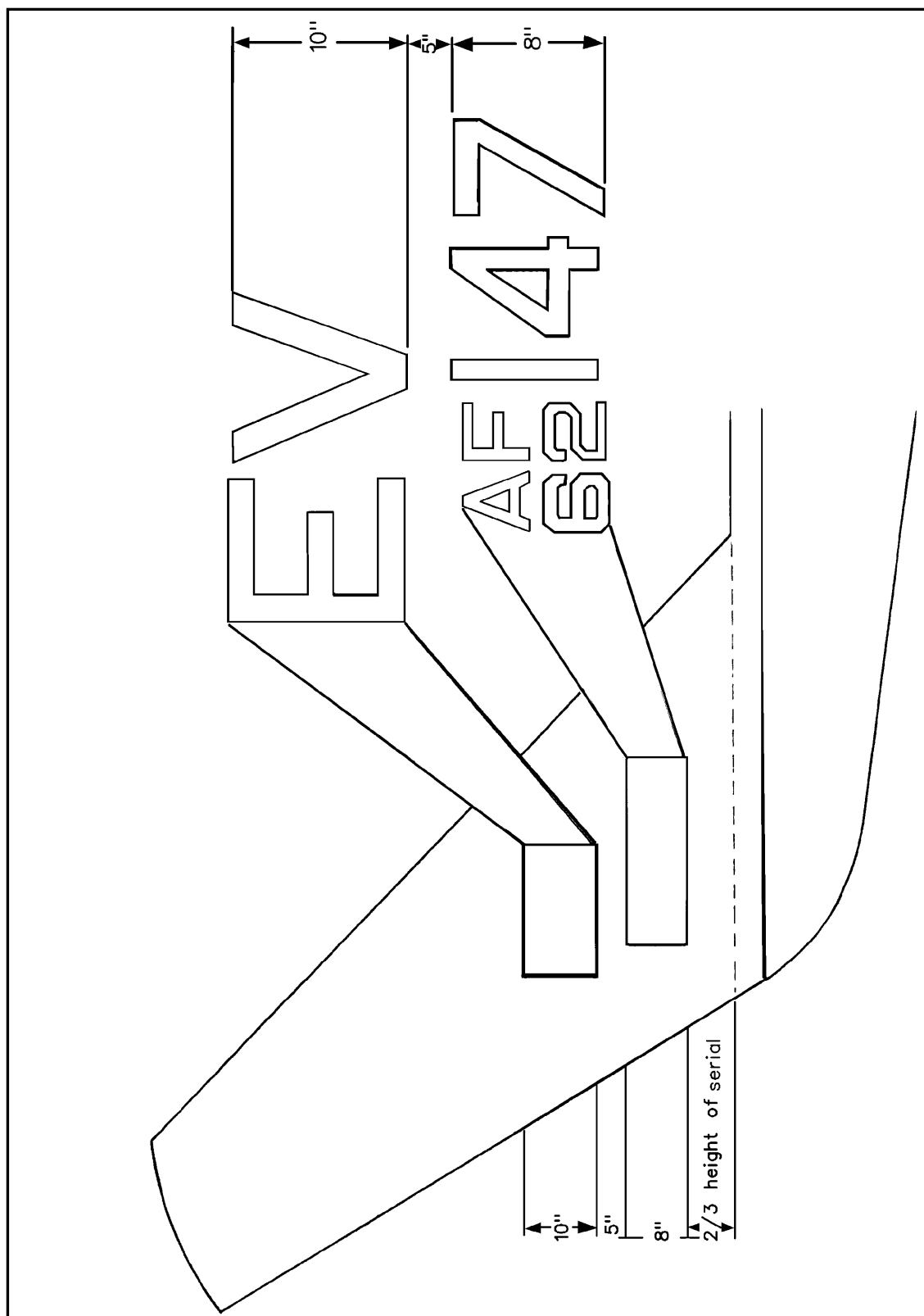


Figure D-40. Distinctive Unit and Serial Number Sizes UH-1F Aircraft

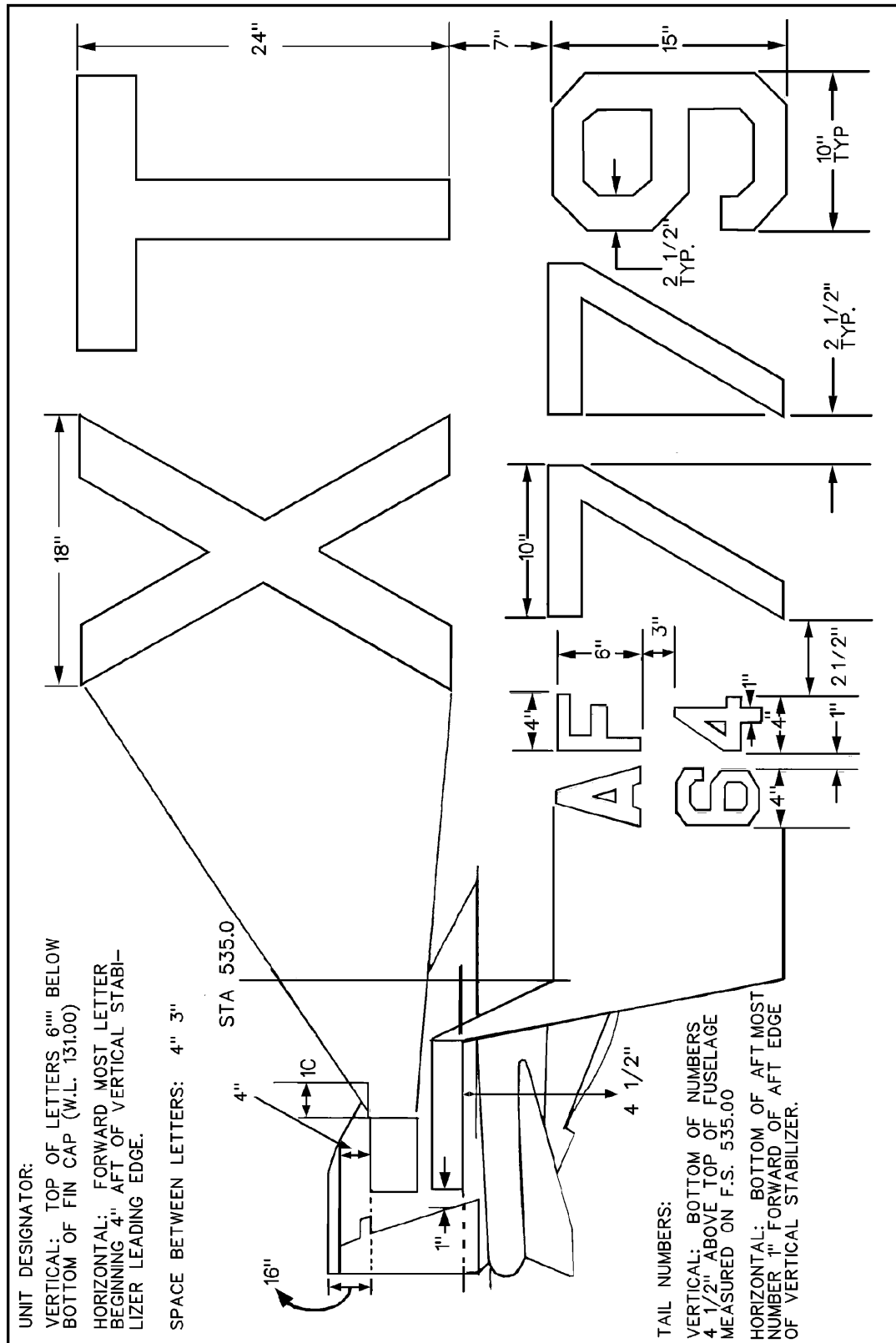


Figure D-41. Distinctive Unit and Serial Number Sizes F/RF-4 Aircraft

TO 1-1-4

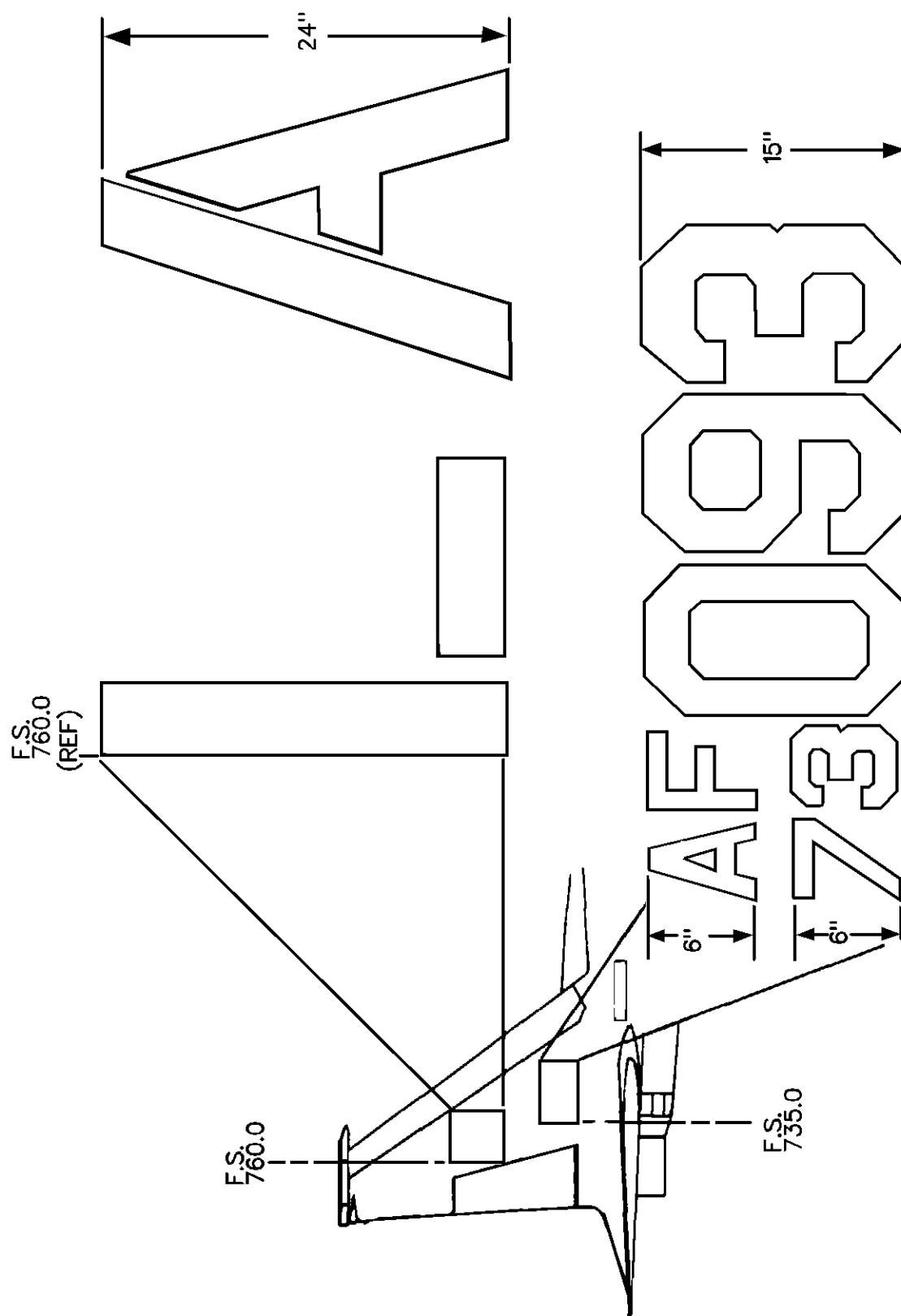


Figure D-42. Distinctive Unit and Serial Number Sizes F/TF-15 Aircraft

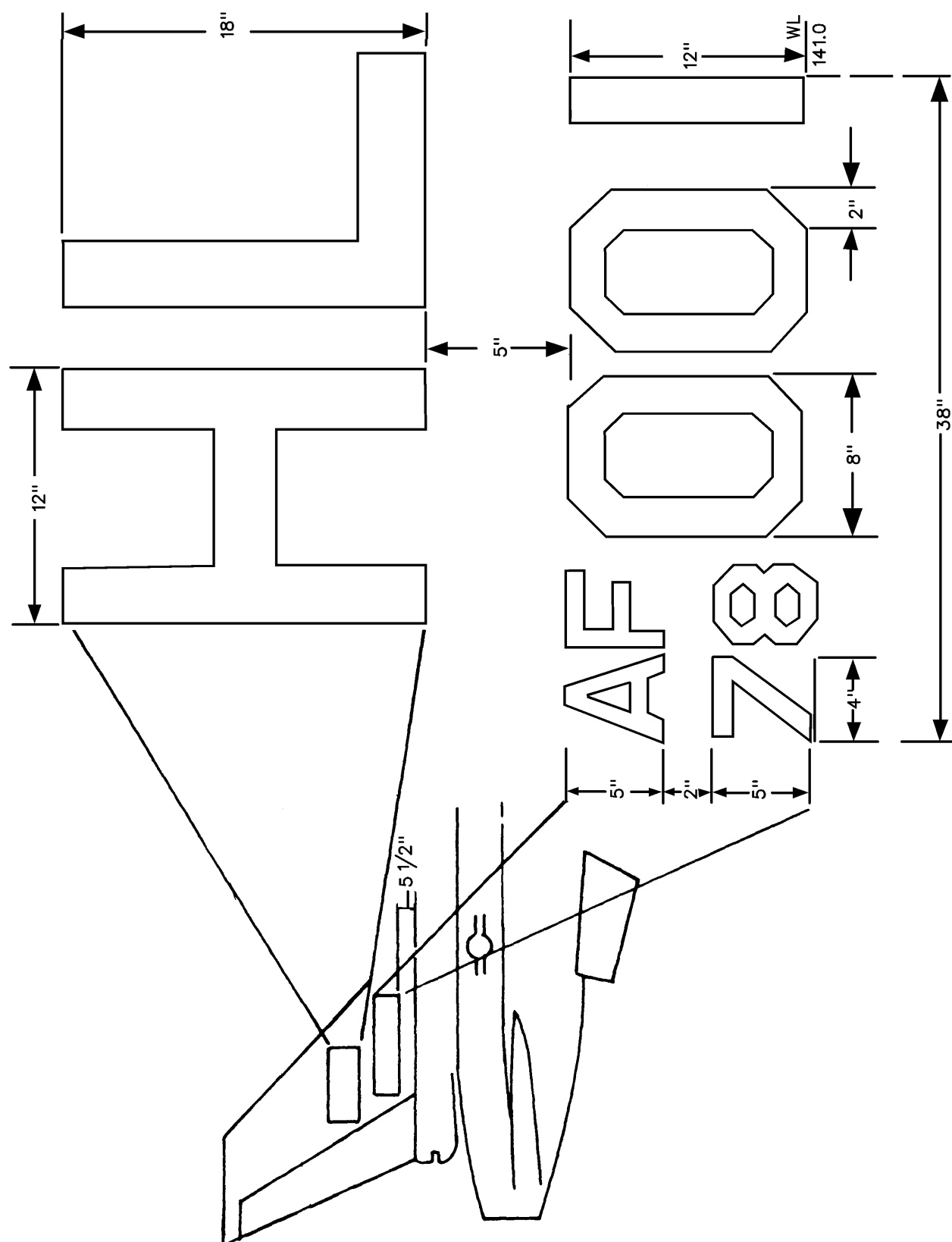


Figure D-43. Distinctive Unit and Serial Number Sizes F-16 Aircraft



TO 1-1-4

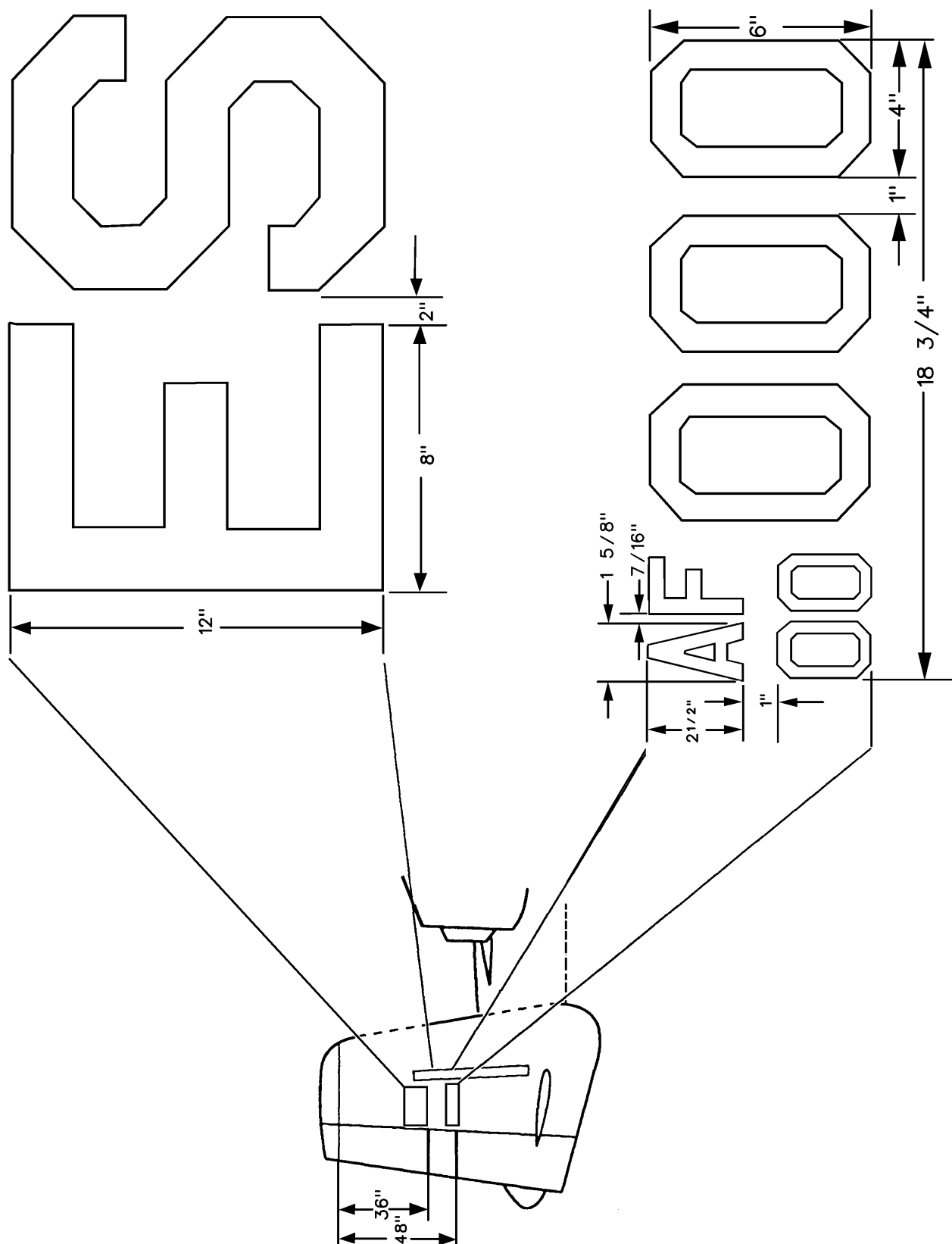


Figure D-44. Distinctive Unit and Serial Number Sizes A-10 Aircraft

## **APPENDIX E**

### **SERVICING, GROUND HANDLING, EMERGENCY, HAZARD WARNING MARKINGS AND ARMAMENT PLACARD LOCATIONS FOR AIRCRAFT**

## LIST OF ILLUSTRATIONS

Contents Figure	Title	Page
E-1	Typical Symbol Dimensioning.....	E-2
E-2	Aircraft Markings, Servicing and Precautioning .....	E-3
E-3	Decalcomania-Ground Here, International Symbol .....	E-5
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E-5	Helicopter Tail Boom Markings.....	E-6
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E-8	Armament Placard Marking .....	E-8
E-9	Armament Placard Locations.....	E-9
E-10	Propeller Warning Stripes and Signs.....	E-10

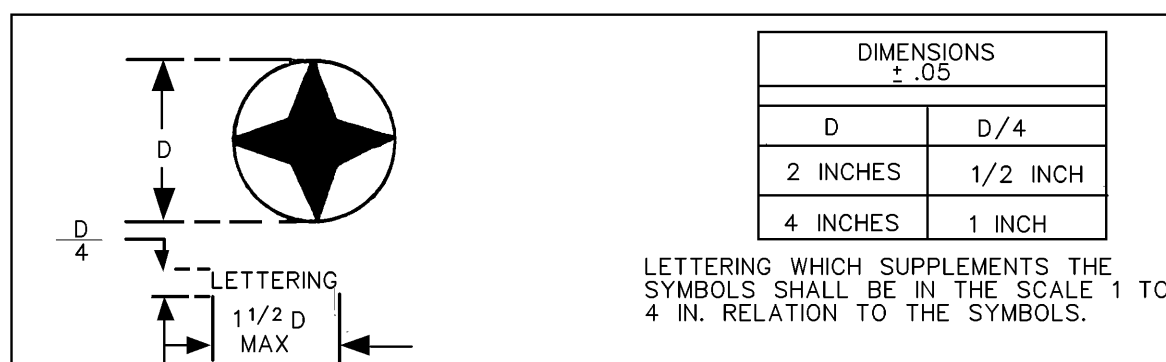


Figure E-1. Typical Symbol Dimensioning






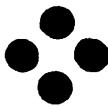










FILLING (a)	
<p>FUELING FILLED FOUR POINT STAR WITH NOTATION OF NATO CODE NUMBER FOR FUEL</p>  <p>(NATO CODE NO.)</p> <p>(d)</p> <p>AF DWG 65B40281 (98749)</p>	<p>(d)</p> <p>AF DWG 65B40299-5(98749) LIQUID</p> <p>(d)</p> <p>AF DWG 65B40299-3(98749) W/O NOTATION</p> <p>OXYGEN TWO HORIZONTAL FILLED RECTANGLES WITH NOTATION OF EITHER "GAS" OR "LIQUID". FOR GASEOUS OXYGEN INCLUDE CHARGING PRESSURES IN ---psi ENGLISH AND METRIC UNITS. ---Kg/Cm<sup>2</sup> FOR LIQUID OXYGEN INCLUDE --- LITRES CAPACITY IN LITRES. when necessary</p> 
<p>ROCKET FUELS FILLED FOUR POINT STAR IN CRESENT WITH NOTATION OF NATO CODE NUMBER FOR ROCKET FUEL</p>  <p>(d)</p> <p>AF DWG 65B40291 (98749) (NATO CODE NO.)</p>	<p>ANTI-DETONANT FILLED CHEVRON OR THRUST WITH NOTATION OF AUGMENTATION NATO CODE NUMBER</p>  <p>(d) (NATO CODE NO.)</p> <p>AF DWG 65B40289 (98749)</p>
<p>ROCKET FILLED CRESENT WITH OXIDIZER NOTATION OF NATO CODE NUMBER FOR ROCKET OXIDIZER.</p>  <p>(d)</p> <p>AF DWG 65B40291 (98749) (NATO CODE NO.)</p>	<p>AIR CONDITIONING DOT PATTERN</p>  <p>(d)</p> <p>AF DWG 65B40287 (98749)</p>
<p>ENGINE LUBRICATING FILLED SQUARE WITH OIL NOTATION OF NATO CODE NUMBER FOR ENGINE LUBRICATING OIL</p>  <p>(d)</p> <p>AF DWG 65B40283 (98749) (NATO CODE NO.)</p>	<p>NITROGEN SERVICES FILLED SQUARE WITH A QUARTER ARC REMOVED FROM EACH CORNER, WITH TYPE OF GAS USED AND PRESSURE IN ENGLISH AND METRIC UNITS</p>  <p>(d)</p> <p>AF DWG 65B40318 (98749) NITROGEN ---psi ---Kg/Cm<sup>2</sup></p>
<p>HYDRAULIC FILLED CIRCLE WITH FLUID NOTATION OF NATO CODE NUMBER FOR HYDRAULIC FLUID.</p>  <p>(d)</p> <p>AF DWG 65B40286 (98749) (NATO CODE NO.)</p>	<p>FIRE EXTINGUISHING A FILLED DIAMOND WITH SYSTEM NOTATION SHOWING NATO CODE NUMBER</p>  <p>(d) (NATO CODE NO.)</p> <p>AF DWG 65B40284 (98749)</p>
<p>DE-ICING FILLED TRIANGLE WITH NOTATION OF NATO CODE NUMBER FOR DE-ICING FLUID</p>  <p>(d)</p> <p>AF DWG 65B40285 (98749) (NATO CODE NO.)</p>	<p>EXTERNAL ELECTRICAL CONNECTIONS FILLED "E" WITH LOWER LIMB SHORTENED STATING SERVICE AND VOLTAGE DETAILS</p>  <p>(d) 28V OR 112 V DC 115/200V, 400 CYCLES</p> <p>AF DWG 65B40290(98749) ...SERVICING ...STARTING ETC.</p>
<p>COOLANT TWO FILLED HORIZONTAL S's WITH NOTATION OF NATO CODE NUMBER FOR COOLANT AND PERCENTAGE COMPOSITION IF NECESSARY</p>  <p>(d)</p> <p>AF DWG 65B40282 (98749) WATER ---% SOLUBLE OIL ---% (NATO CODE NO.)</p>	<p>GROUNDING OR EARTHING A FILLED INVERTED "T" WITH TWO PARALLEL BARS UNDERNEATH WHICH DIMINISH IN SIZE</p>  <p>GROUND (EARTH) HERE</p>
<p>PNEUMATIC FILLED X WITH NOTATION OF MAXIMUM CHARGING PRESSURE IN ENGLISH AND METRIC UNITS</p>  <p>(d)</p> <p>AF DWG 65B40298 (98749) MAXIMUM ---psi ---Kg/Cm<sup>2</sup></p>	<p>INSPECTION OF BATTERY A FILLED ELECTRIC FLASH SIGN</p>  <p>(d)</p> <p>AF DWG 65B40292 (98749)</p>
(a) COLOR-BLACK OR WHITE ACCORDING TO BACKGROUND	

Figure E-2. Aircraft Markings, Servicing and Precautioning (Sheet 1 of 2)

TO 1-1-4

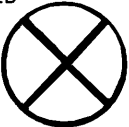




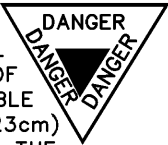
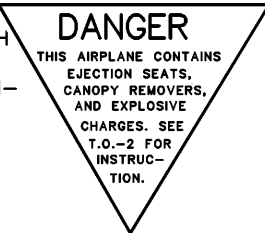
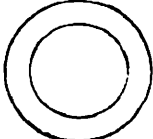
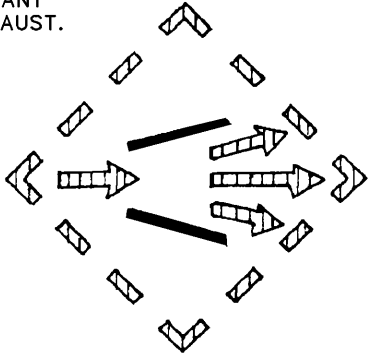


<h2 style="text-align: center;">FILLING</h2> <p style="text-align: center;">COLOR BLACK OR WHITE ACCORDING TO BACKGROUND</p>	<h2 style="text-align: center;">GROUND HANDLING <sup>(b)</sup></h2> <p style="text-align: center;">COLOR-ORANGE-YELLOW-13538</p>
<p>PNEUMATIC STARTER CONNECTION</p> <p>A FILLED X CIRCUMSCRIBED BY A FILLED RING</p>  <p style="text-align: center;">(d)</p> <p>AF DWG 65B40317 (98749)</p>	<p>JACKING POINT</p> <p>ORANGE YELLOW FILLED SQUARE WITH TWO SLANTING LEGS ON BOTTOM SIDE.</p>  <p style="text-align: center;">(d)</p> <p>AF DWG 65B409297 (98749)</p>
<p>REFRIGERANT REPLENISHMENT</p> <p>TWO FILLED TRIANGLES WITH APEXES JOINED ON HORIZONTAL CENTER LINE.</p> 	<p>SLINGING OR HOISTING POINTS</p> <p>ORANGE YELLOW FILLED HOOK ON A HORIZONTAL LINE.</p>  <p style="text-align: center;">(d)</p> <p>AF DWG 65B40294 (98749)</p>
<h2 style="text-align: center;">HAZARD <sup>(b)</sup></h2> <p style="text-align: center;">COLOR - RED - 11136</p>	<p>MOORING OR PICKETING</p> <p>ORANGE YELLOW FILLED ANCHOR.</p>  <p style="text-align: center;">(d)</p> <p>AF DWG 65B40295 (98749)</p>
<p style="text-align: center;">MARK BOTH SIDES OF FUSELAGE</p> <p>EXPLOSIVE ACTUATED DEVICES</p> <p>RED FILLED EQUILATERAL TRIANGLE APEX DOWN, OF THE LARGEST PRACTICABLE SIZE UP TO A 9 INCH (23cm) SIZE TO BE APPLIED TO THE EXTERNAL PART OF AIRCRAFT ADJACENT TO THE EXPLOSIVE DEVICE. THE WORD "DANGER" TO BE WITH ITS TOP TO A SURROUNDING PERIPHERAL RED LINE.</p>  <p>ALTERNATIVE MARKING FOR T-37/T-38 AIRCRAFT IS A WHITE EQUILATERAL TRIANGLE APEX DOWN, 9 INCHES HIGH WHICH INCLUDES A 1/4 IN. RED BORDER. THE WORD "DANGER" AND EXPLANATORY TEXT IS PRINTED IN RED ON THE WHITE BACKGROUND.</p> 	<p>TOWING (c) ORANGE YELLOW FILLED RING.</p>  <p style="text-align: center;">(d)</p> <p>AF DWG 65B40296 (98749)</p> <p>AIRBORNE AUXILIARY TURBINE POWER PLANT INLET AND OR EXHAUST.</p>  <p>COLOR CODE</p> <p> RED</p> <p> BLACK</p> <p style="text-align: center;">(d)</p> <p>AF DWG 65B40320 (98749)</p>
<p>(b) OUTLINE SYMBOLS IN BLACK OR WHITE ACCORDING TO THE BACKGROUND.</p> <p>(c) OPTIONAL WHERE TOWING POINT IS OBVIOUS AND SUITABLE LOCATION FOR SYMBOL IS NOT AVAILABLE.</p> <p>(d) OFFICE OF PRIMARY RESPONSIBILITY (652ABG) McCLELLAN AFB CA 95652-5000.</p>	

Figure E-2. Aircraft Markings, Servicing and Precautioning (Sheet 2 of 2)

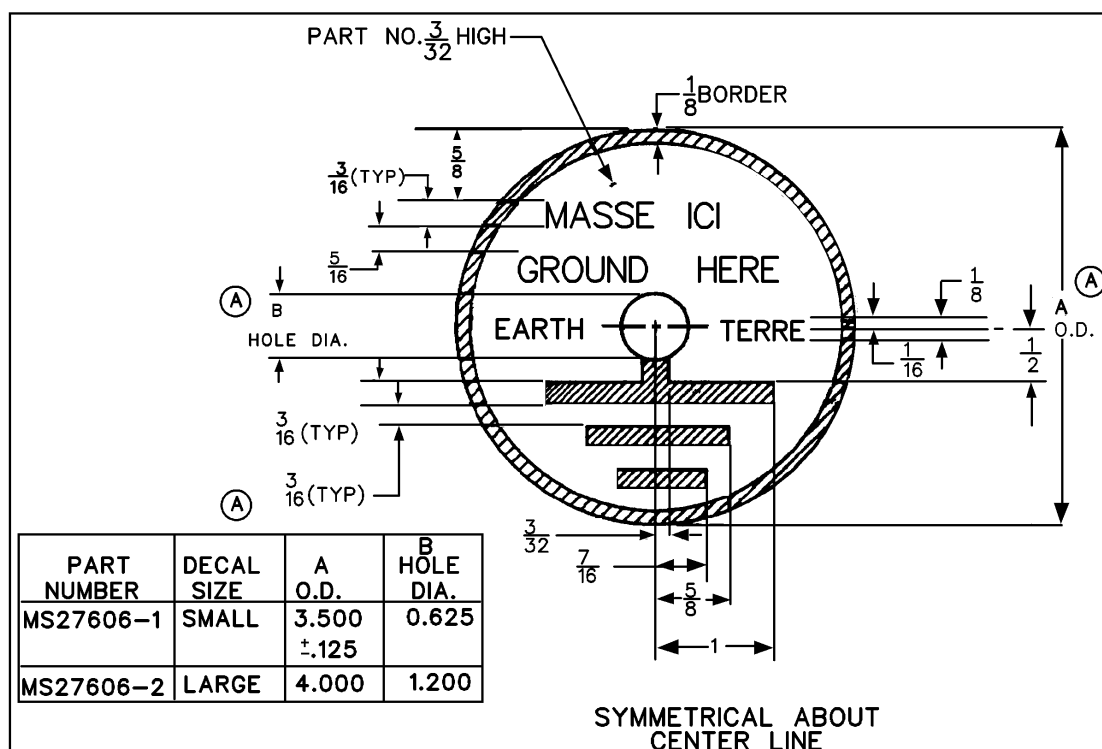


Figure E-3. Decalcomania - Ground Here, International Symbol

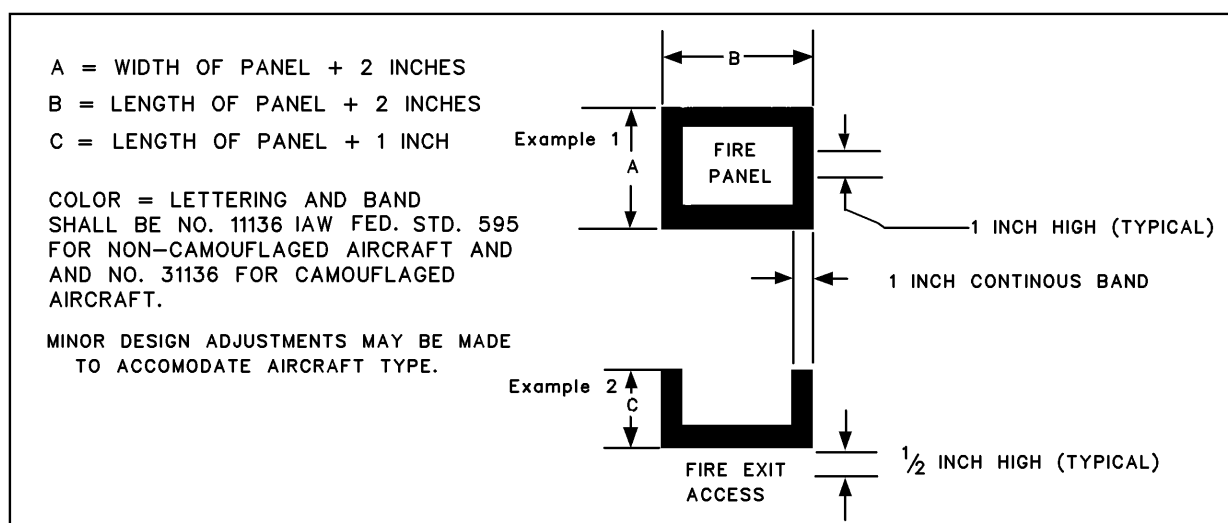


Figure E-4. Markings For Fire Access Panel

TO 1-1-4

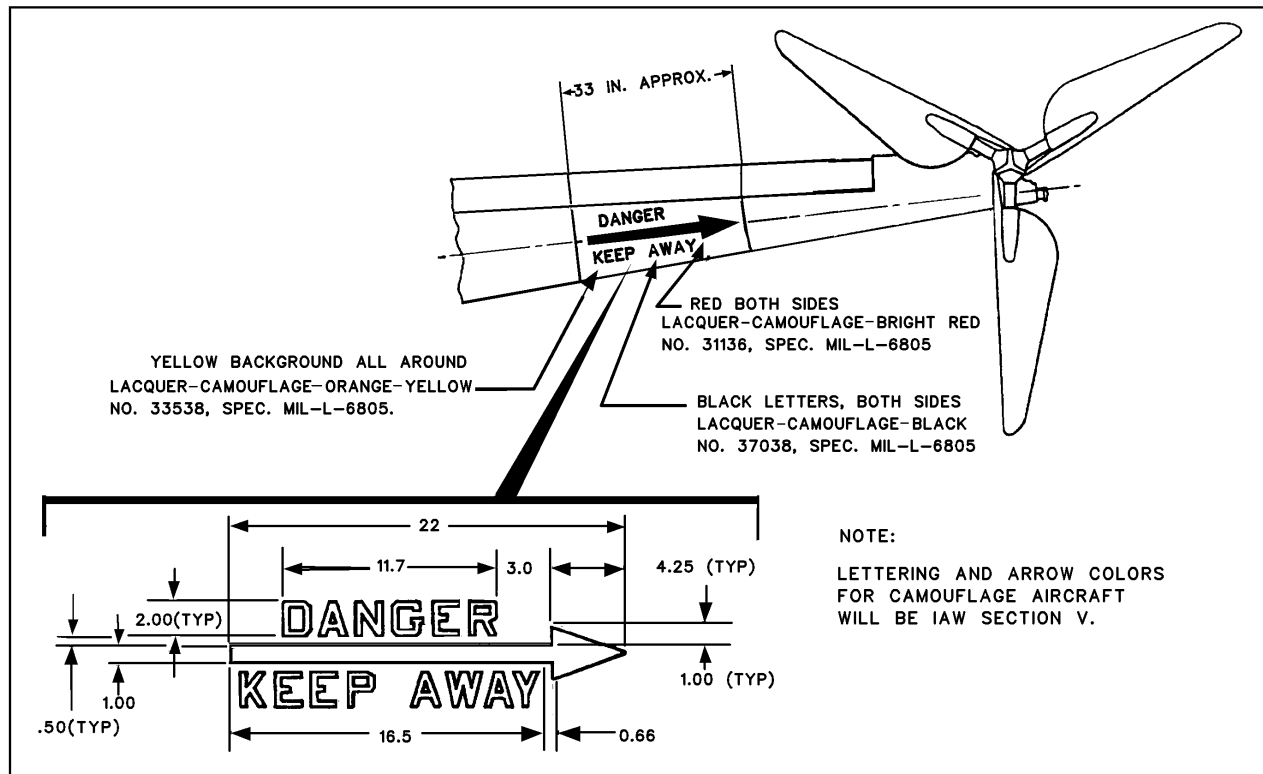


Figure E-5. Helicopter Tail Boom Markings

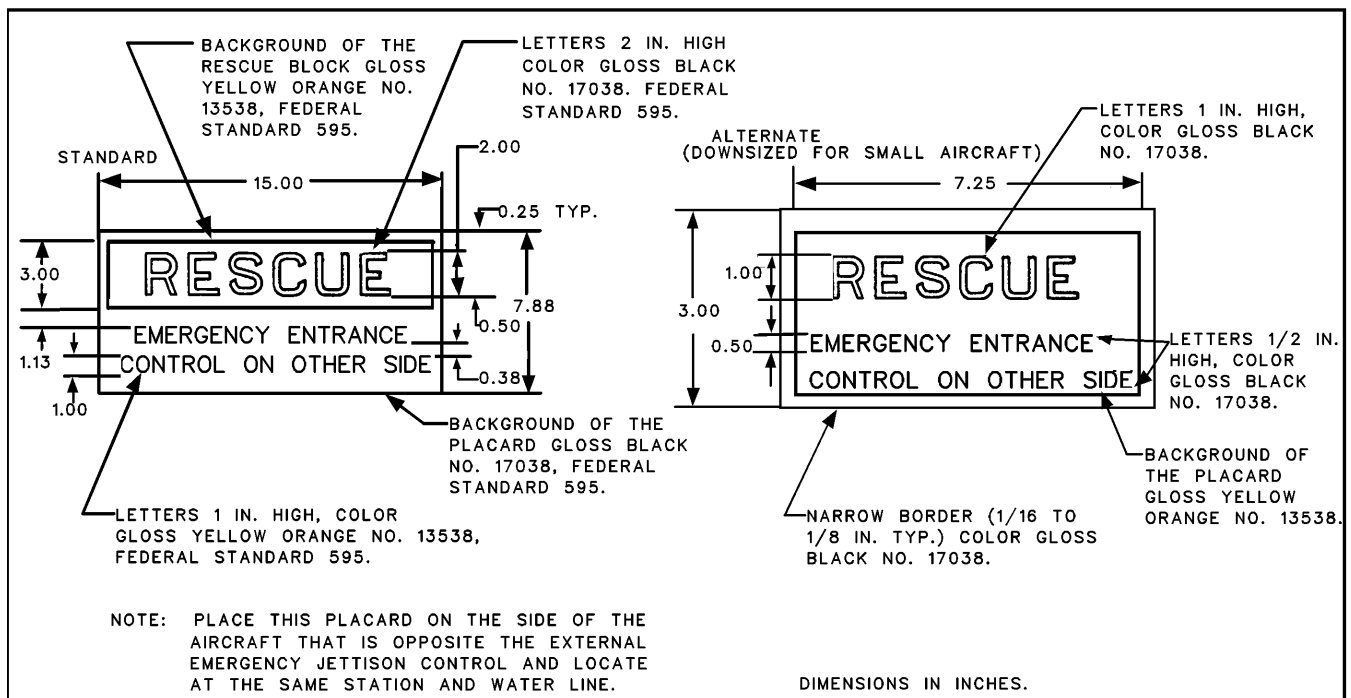


Figure E-6. Emergency Instruction Markings

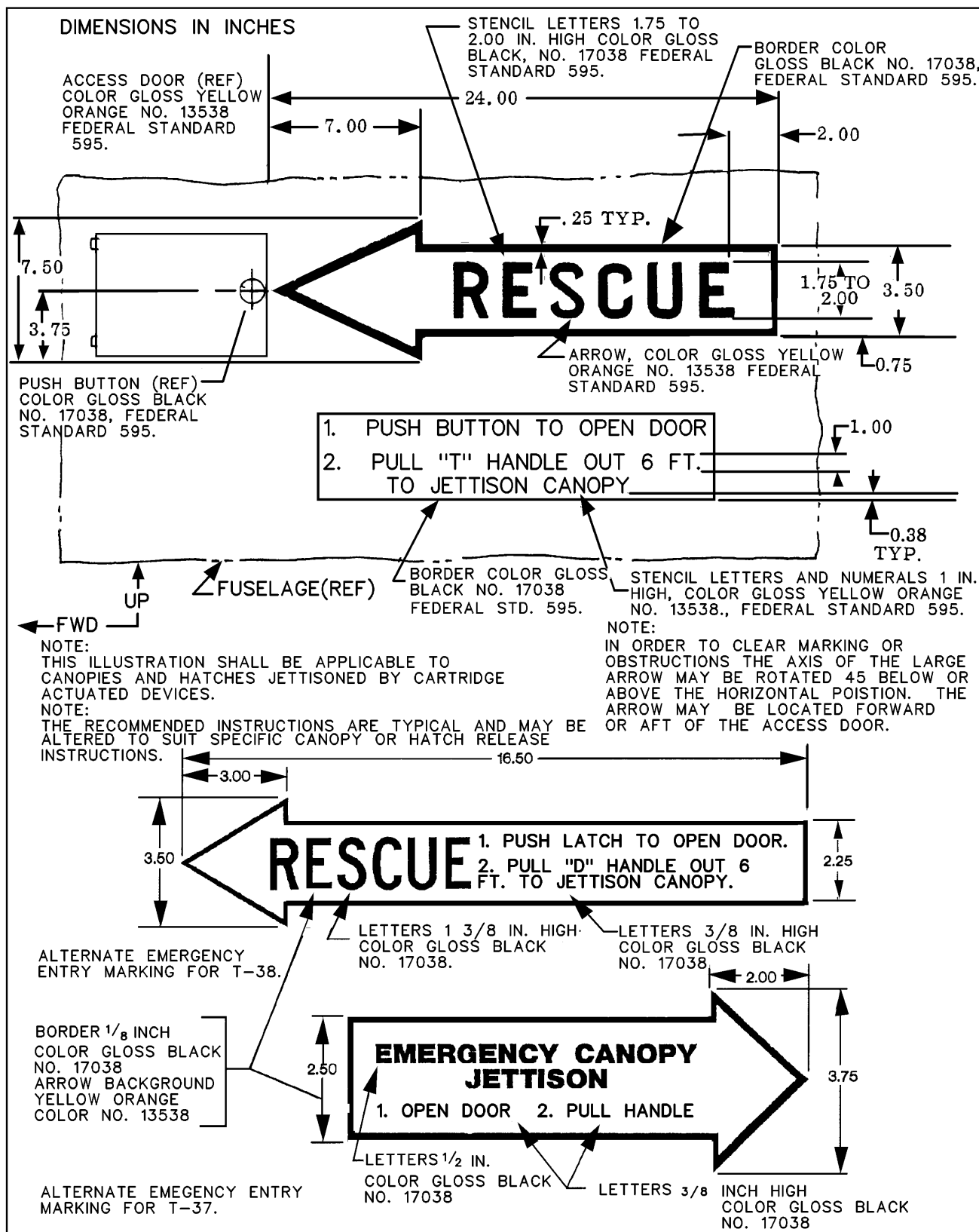


Figure E-7. Emergency Entry Markings



TO 1-1-4

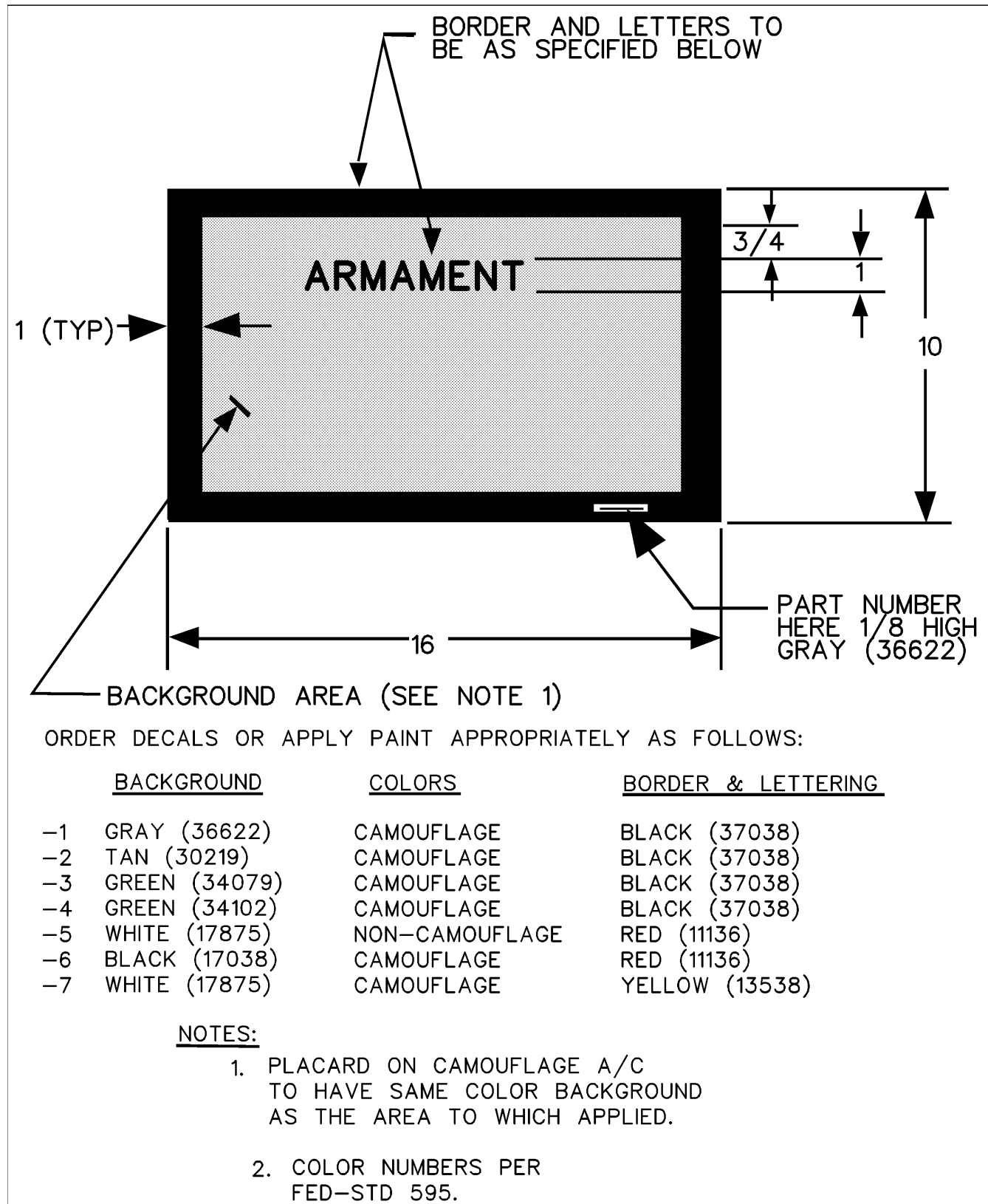


Figure E-8. Armament Placard Marking

TYPE ACFT	PLACARD LOCATIONS
A-7/7D	Locate decal immediately below panel 1222-10 and to the left of panel 1222-9. Placement will be such that the decal is horizontal to the ramp surface.
A-37	Locate decal on the left side of aircraft between stations 54.00 and 78.20, with the upper edge placed 1 inch below the strake mounting bracket and the right e step.
AC-130	Locate the decal 4 inches down and 3 inches in from the spoiler door on the right wheel-well fairing, centered between the spoiler door and the right air deflector door.
AC-130U, HC-130 and MC-130	Locate the placard on the left side of the aircraft with the leading edge of the placard 14 inches AFT of the crew entrance door on WL 173.
AT-33	Locate forward edge of placard on station 163.8 plus 26.6 inches and top of placard 22 inches below cockpit.
RF/F-4	Locate the decal on the outboard surface of the left intake duct of panel 125L, so as not to be covered when engine covers are installed.
F-5A/B	Locate placard on aircraft's left intake duct 1 inch aft of leading edge of duct and 3 inches above upper surface of wing inboard leading edge, measured at the lower aft corner of placard.
F-5E/F	Locate placard on aircraft left intake duct centered between leading edge of duct and left position light and 4 inches above upper surface of the wing inboard of placard.
F-5E	Locate decal on the left hand side of the aircraft on door assembly, part No. 10770-1, fuselage station 137.50 to 194.00: 3 1/4, inches from right hand vertical edge of door running parallel and 6 1/2 inches from lower edge of door.
F-5F	Locate decal on the left hand side of the aircraft, on door assembly, part No. 18-10814-1, fuselage station 87.50 to 144.00: 4 inches aft of left hand vertical edge of the decal in line with the lower hinge line of the pressure doors.
B-52	Locate decal on left hand forward fuselage at station 315.50 to 331.50, 23 to 33 inches below WL139, measured along skin contour.
UH-60A	Locate placard on the right side personnel door, centered four inches below the forward window.
H-3	Center decal on panel below window of personnel door.
H-53	Locate decal on right-hand side of fuselage forward of personnel door, between stations 162 and 182, WL120.
UH- 1N	Locate decal on door post, aft of pilot's door.
OV-10A	Locate decal on the right side of aircraft between fuselage station 4288 and 60.60, vertically 2 inches above top edge of right fuselage access panel part No.
UH-1F/N	Locate decal between station 74.25 and station 64.25, 18 inches above the door sill.

Figure E-9. Armament Placard Locations

TO 1-1-4

# PROPELLAR WARNING STRIPES AND SIGNS

INSIGNIA RED CAUTION BAND TO BE 3" WIDE.  
 INSIGNIA WHITE LETTERS, SUPERIMPOSED  
 ON BAND TO BE 2" HIGH.  
 INSIGNIA RED WORDS, **DANGER**, TO BE 2" HIGH  
 INSIGNIA RED **ARROWS** TO BE 4" HIGH.

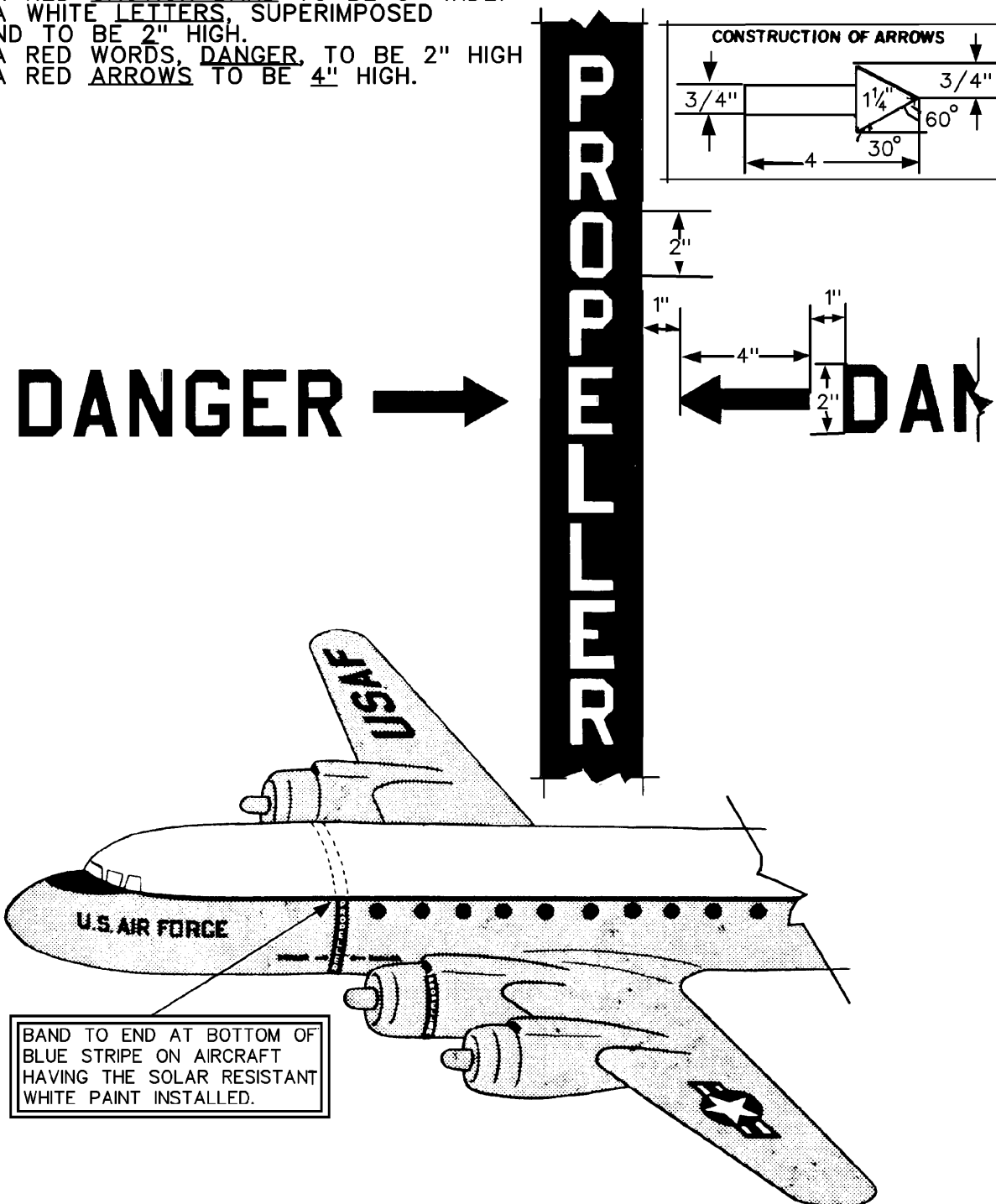


Figure E-10. Propeller Warning Stripes and Signs

## **APPENDIX F**

### **IDENTIFICATION CODES AND MARKINGS FOR TUBING, HOSE AND PIPE FOR AIRCRAFT**

## LIST OF ILLUSTRATIONS

Contents Figure	Title	Page
F-1	Examples of Identification Groups.....	F-5
F-2	Color-coded Functional Identification Tapes.....	F-6
F-3	Warning Symbols.....	F-7
F-4	Optional Arrangement for Identification.....	F-8
F-5	Examples of Electrical Identification.....	F-9
F-6	Tag Identification .....	F-9

## LIST OF TABLES

Number	Title	Page
F-1	Functions and Associated Symbols.....	F-4
F-1.	<u>Colors.</u> Colors conforming to FED-STD-595 as indicated below shall be used to denote function.	

<u>Color</u>	<u>FED-STD-595 Code No.</u>
Blue .....	15102
Green.....	14187
Yellow.....	13655
Orange.....	12197
Red.....	11136
Brown.....	10049
Gray.....	16473
Black.....	17038

F-2. Application colors. Color coding shall be based upon function as indicated below. Where more than one color is required to identify a single function the order of colors is from left to right, and the colored area shall be composed of vertical stripes, of equal width, of the required colors (see figures F-2 and F-4).

<u>Function</u>	<u>Color</u>
Fuel .....	Red
Rocket Oxidizer .....	Green, Gray
Rocket Fuel.....	Red, Gray
Water Injection.....	Red, Gray, Ped
Lubrication.....	Yellow
Hydraulic .....	Blue, Yellow
Solvent .....	Blue, Brown
Pneumatic Air.....	Orange, Blue
Instrument Air .....	Orange, Gray
Coolant.....	Blue
Breathing Oxygen .....	Green
Air Conditioning.....	Brown, Gray
Monopropellant.....	Yellow, Orange
Battery Activator.....	Yellow, Gray
Rain Repellents .....	Blue, Gray
Vacuum .....	Gray, Orange, Gray
Fire Protection.....	Brown
De-Icing.....	Gray

<u>Function</u>	<u>Color</u>
Rocket Catalyst .....	Yellow, Green
Compressed Gas .....	Orange
Electrical Conduit .....	Brown, Orange
Inerting Fluid .....	Orange, Green

F-3. Designation of hazards. Hazardous materials or conditions shall be designated in black letters on white or metallic (silvery or chrome) background as specified below (see figure F-1). Where such hazards result from working pressure only, and where the pressure is indicated in the identification, no further identification of hazard is necessary. Under conditions warranting special care over and above that required for the identified hazard, the skull and cross-bones symbol, illustrated in figure F-3 shall be used.

F-4. Hazards. Hazards shall be identified in accordance with above letter sizes shall be the same as those used for function within the same identification group, with a 1/32 inch vertical space between words comprising a set, i. e., a dual hazard, and a 1/4 inch space between sets (or between words if only a single hazard to indicated). Where tapes are used to identify function, identification of hazard may be accomplished with tape(s) of 1/2 inch minimum width. When painted or appearing on tags or bands the hazard shall be the last word(s) in the identification following the direction of flow arrow, if applicable. Hazards associated with various line contents shall be in accordance with primary and secondary warning designations as established in MIL-STD-101. However, for application under this technical manual words and abbreviations are to be substituted for colors to identify specific classes of hazards as indicated under "Identification Marking" below. To facilitate cross-referencing, MIL-STD-101 colors applicable to all hazards are indicated opposite the identification markings. Thus it will only be necessary to refer to the color shown in table II of MIL-STD101 for a particular content, then substitute applicable words or abbreviations.

CLASS OF HAZARD	IDENTIFICATION MARKING	MIL-STD-101 COLOR
<u>Flammable materials.</u> All materials known ordinarily as flammable or combustibles.	FLAM .....	Yellow
<u>Toxic and poisonous materials.</u> All materials extremely hazardous life or health, under normal conditions, as toxic or poisons.	TOXIC .....	Brown
<u>Anaesthetics and harmful materials.</u> All materials productive or anaesthetic vapors and all liquid chemicals and compounds hazardous to life and property but not normally productive of dangerous quantities of fumes or vapors.	AAHM .....	Blue
<u>Oxidizing materials.</u> All materials which readily furnish oxygen for combustion and fire producers which react explosively or with evolution of heat in contact with any other materials.	OXYM.....	Green
<u>Physically dangerous materials.</u> All materials, not dangerous in themselves, which are asphyxiating in confined areas or which are generally handled in a dangerous physical state pressure or temperature.	PHDAN .....	Gray
<u>Fire protection materials.</u> All materials provided in piping systems or in compressed gas cylinders exclusively for use in fire protection.	FPM.....	Red

TO 1-1-4























FUNCTION	SYMBOL	ILLUSTRATION
ROCKET OXIDIZER	CRESENT	
ROCKET CATALYST	VERTICAL STRIPES	
ROCKET FUEL	FOUR POINT STAR INSIDE CRESENT	
FUEL	FOUR POINT STAR	
WATER INJECTION	INVERTED CHEVRONS	
LUBRICATION	STAGGERED SQUARES	
HYDRAULIC	CIRCLE	
COMPRESSED GAS	BROAD DIAGONAL STRIPE	
INSTRUMENT AIR	CONTINUOUS ZIG-ZAG STRIPE	
COOLANT	HORIZONTALS	
BREATHING OXYGEN	RECTANGLE	
AIR CONDITIONING	GRAVEL PATTERN	
FIRE PROTECTION	HORIZONTAL DIAMOND	
DE-ICING	STAGGERED TRIANGLES	
PNEUMATIC	CONTINUOUS X-FORM LATTICE	
ELECTRICAL CONDUIT	FLASH OF LIGHTING	
INERTING FLUID	STAGGERED PIPE CROSSES	
SOLVENT	HORIZONTAL STRIPES	
MONOPROPELLANT	BLOCK T	
VACUUM	VERTICAL WAVY LINE	
BATTERY ACTIVATOR	SPARKLING	
RAIN REPELLANT	RAIN DROPS	

Table F-1. Functions and Associated Symbols.

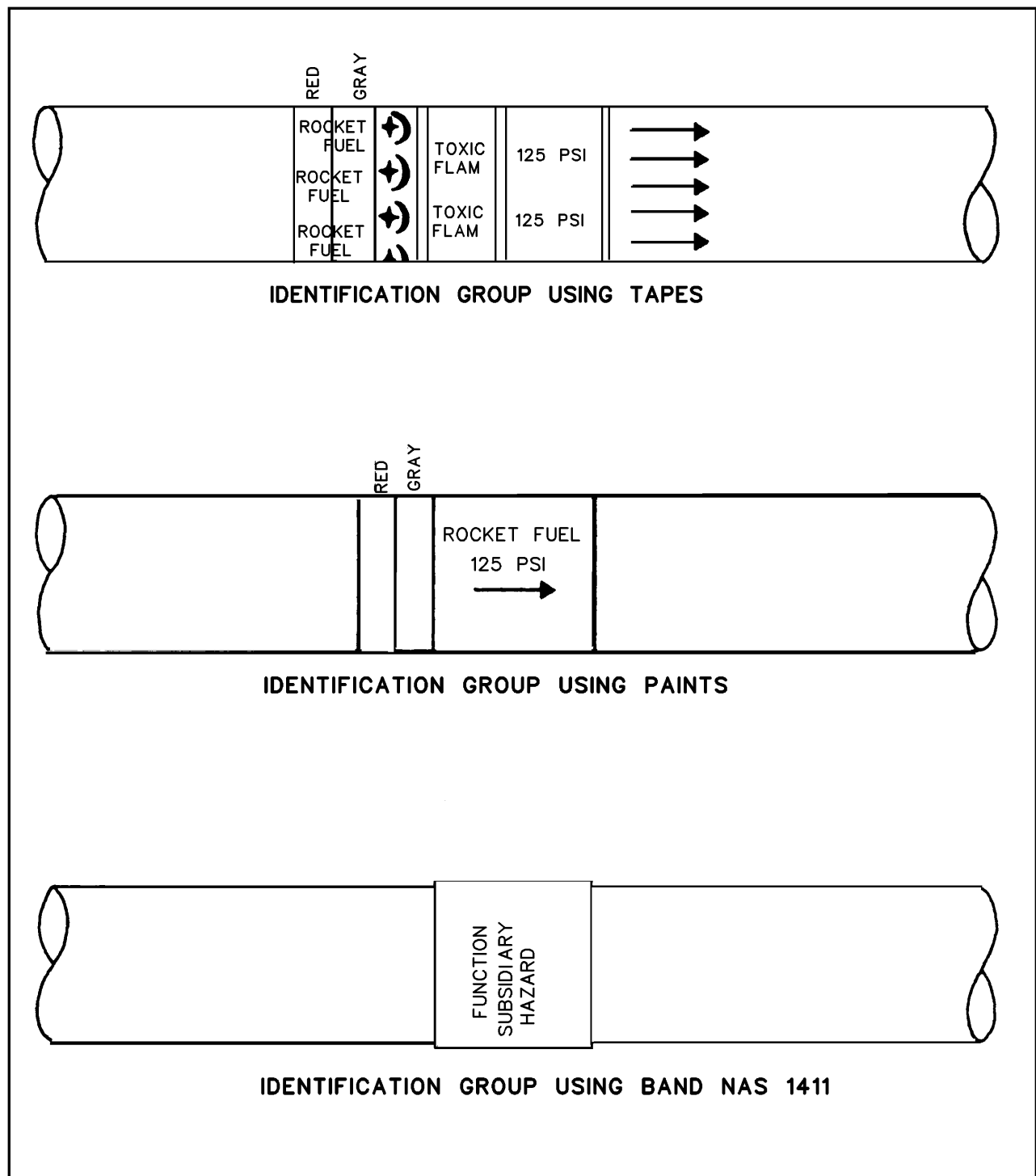


Figure F-1. Examples of Identification Groups



TO 1-1-4

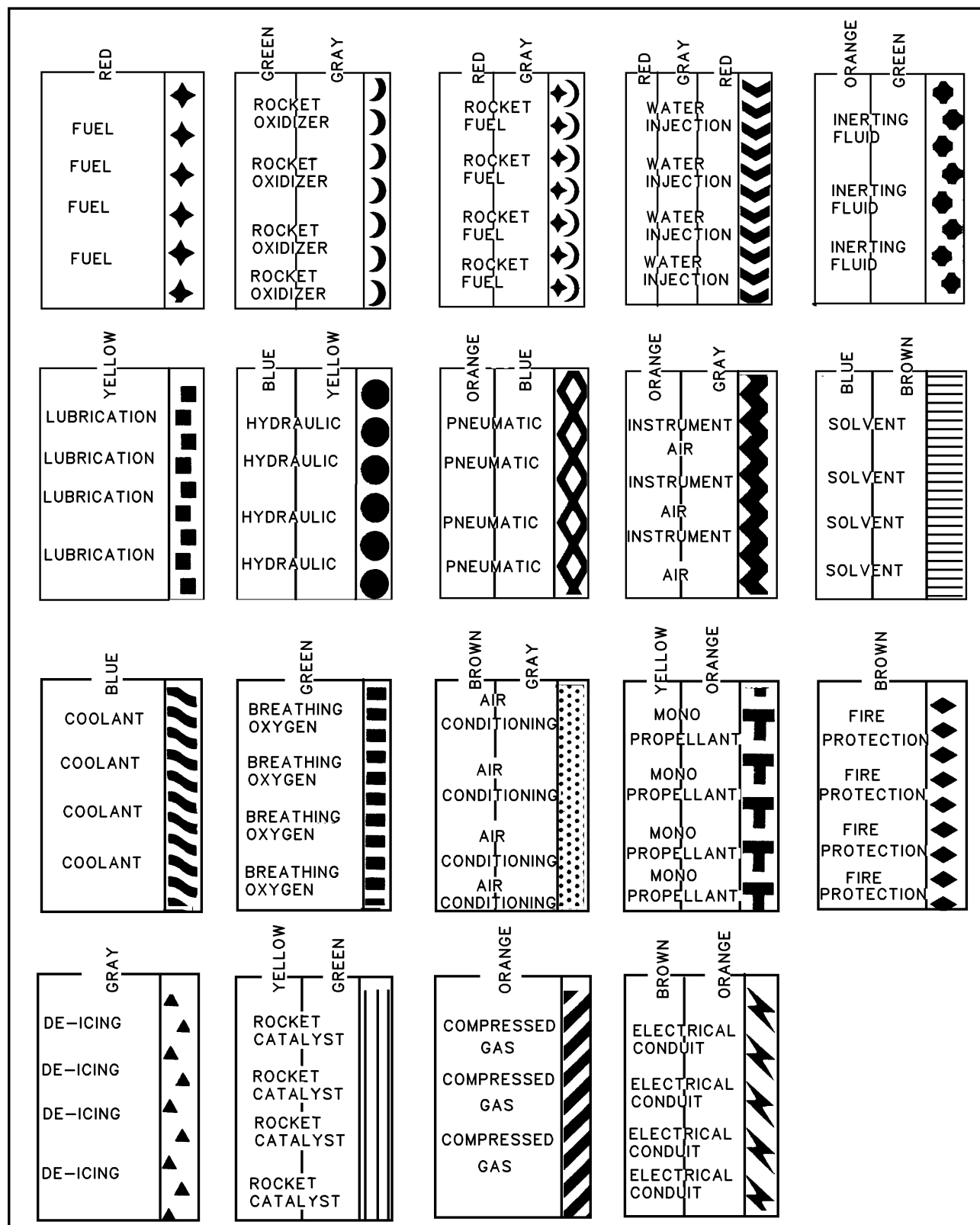


Figure F-2. Color-coded Functional Identification Tapes ( Sheet 1 of 2)

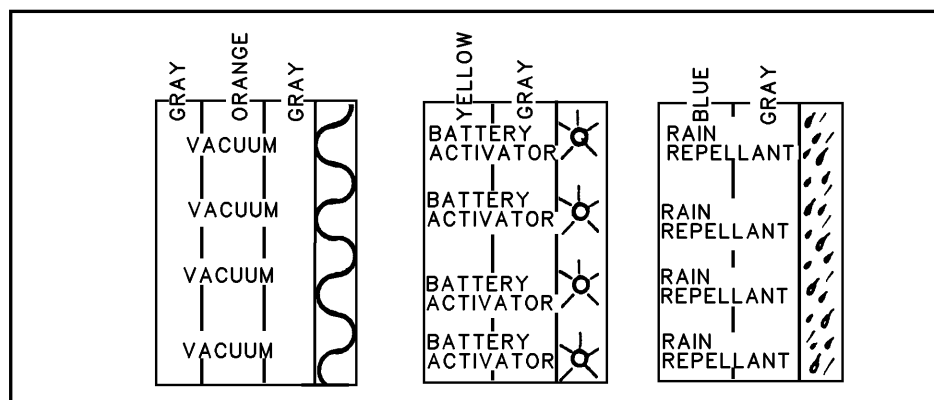


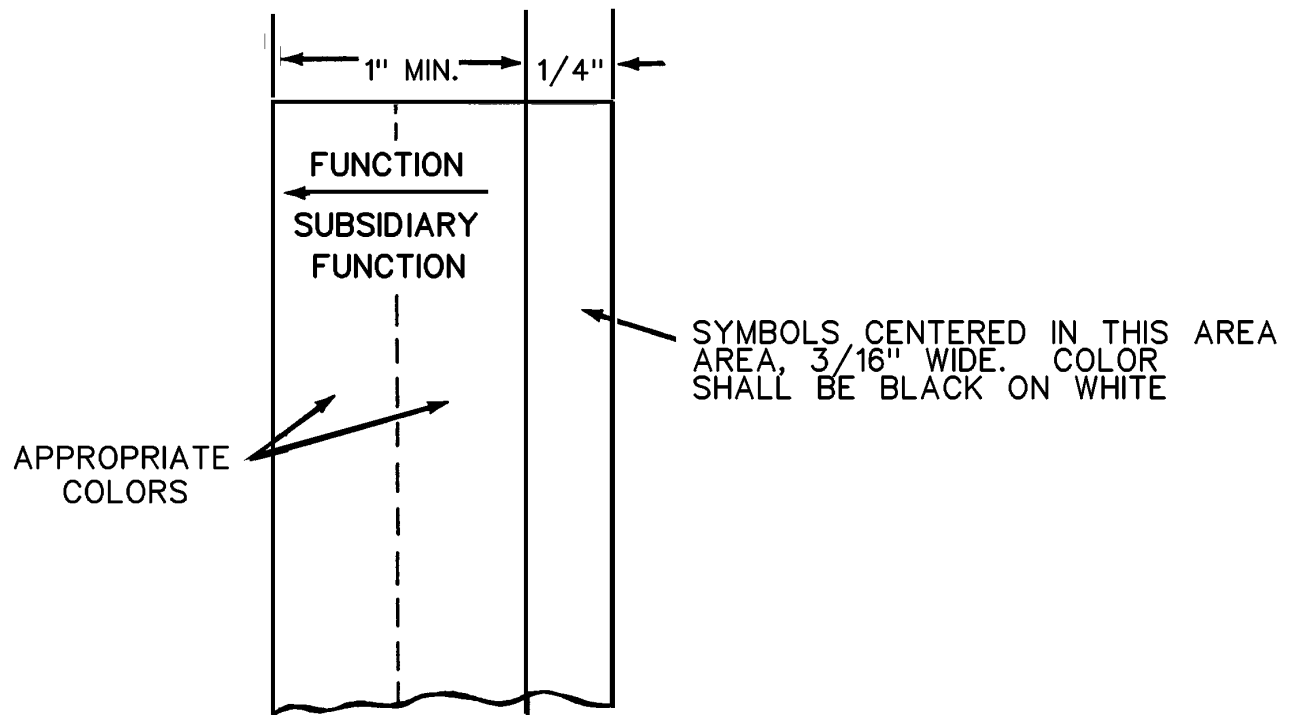
Figure F-2. Color-coded Functional Identification Tapes (Sheet 2 of 2)

1. Warning symbols to be printed on tapes.
2. Maximum width of tape 1/2 inch. Clearance between the symbol and the edge of the tape on either side, shall be approximately one-fourth the width of the symbol.
3. Symbol to be black on a white or metallic (silvery or chrome) background.
4. Symbols shall recur at a maximum interval of 1/4 inch.
5. This symbol should be used sparingly and should not be used on lines to warn against high pressure, or against a hazard already identified.
6. The warning symbol shall be placed immediately adjacent to the identification group at the end opposite the functional tape.

NOTE: This symbol may be stenciled on tags and painted bands, or stamped on aluminum alloy tags.

Figure F-3. Warning Symbols

TO 1-1-4



## NOTES:

1. Letters shall be printed in black, 3/32" high with 1/32" between lines of a legend and 1/4 " between a legend and its repetition.
2. Arrow shall be black, head 3/32" high, and shaft 1/32" wide.
3. Arrow to have head on both ends for reversible flow.
4. Colors shall conform to paragraph F-2 and Symbols as shown in table F-1.
5. Tape shall be a minimum of 1" wide.

Figure F-4. Optional Arrangement for Identification

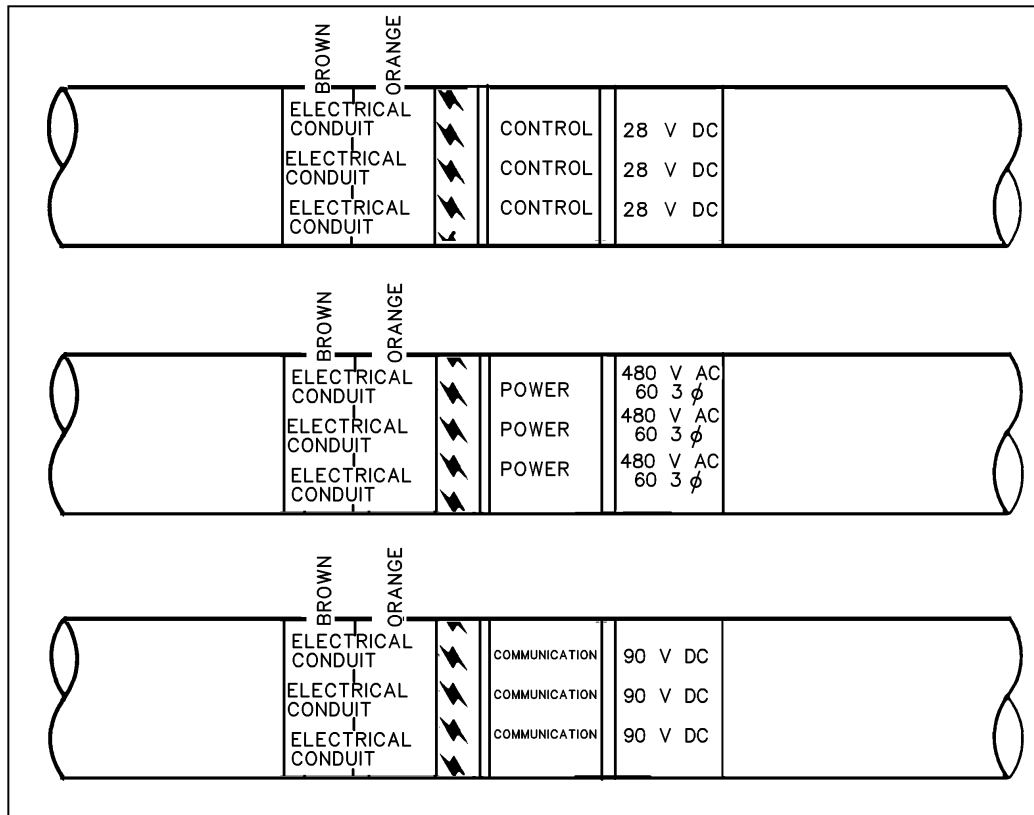
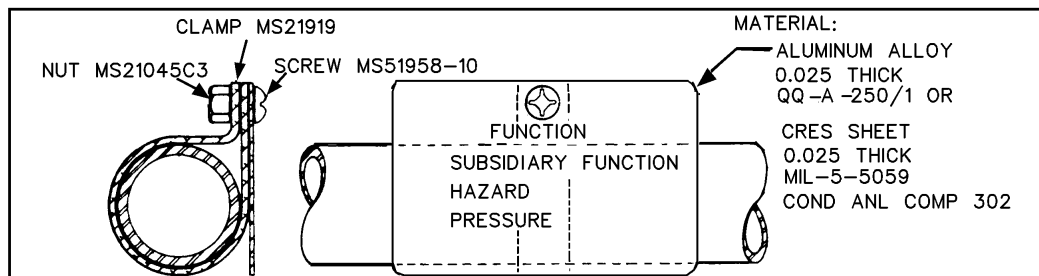


Figure F-5. Examples of Electrical Identification



- NOTES:
1. Tag sizes shall be compatible with the diameter of the tubing.
  2. Size of letters for wording on tag shall be compatible with tag.
  3. Arrow size shall be compatible with letters.
  4. Arrow shall have head on both ends for reversible flow.
  5. If temperature exceeds 500°F or if tags are used on LOX lines, remove cushion from clamp and use plain clamp.
  6. More than one clamp may be used if required for rigidity.

Figure F-6. Tag Identification

