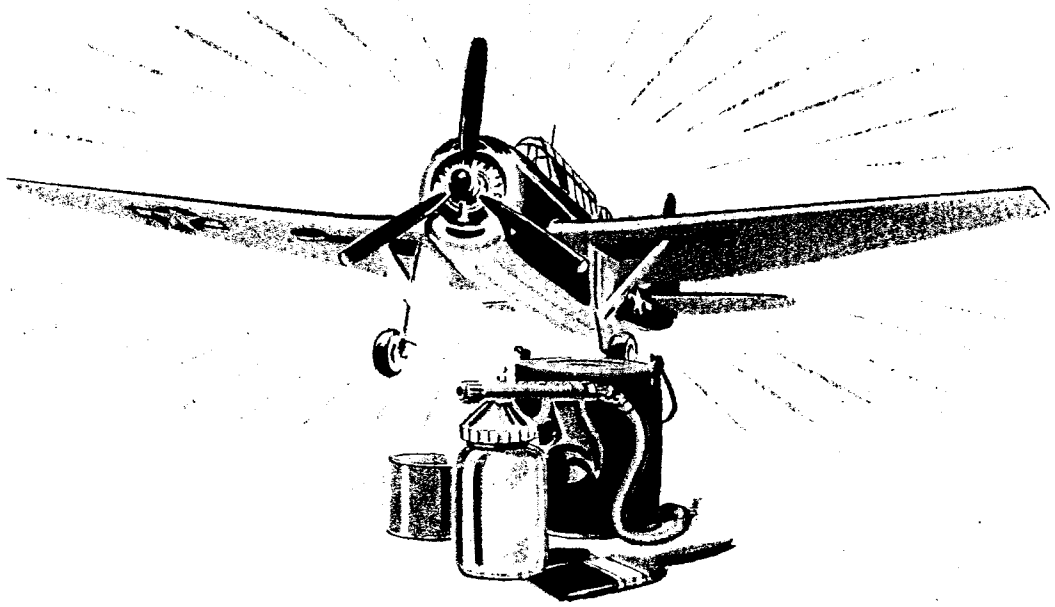
# SECTION VII
# FINISH SPECIFICATIONS



### a. GENERAL.

This section contains information covering only those processes and materials which are necessary to enable field personnel to refinish parts which have been repaired or replaced in service.

Directions are contained herein for painting, cleaning, and otherwise protecting the surfaces of metal, fabric and plastic parts of the airplane. The exterior surfaces of the first 1623 TBM-3 airplanes (Navy Serial Nos. 22857 to 23656, 68062 to 68884). are painted in camouflage colors conforming to Figure 444. The 1624th TBM-3 (Navy Serial No. 68885) and subsequent airplanes are painted a glossy sea blue, with the following exceptions:

(1) All fabric surfaces that formerly received either glossy sea blue, glossy intermediate blue, or glossy insignia white camouflage dope are now to receive glossy sea blue dope only (Specification AN-D-2).

(2) All lettering and directional signs on exterior metal surfaces are to be a glossy insignia white lacquer, in accordance with Specification AN-TT-L-51. All lettering and directional signs on doped fabric surfaces are to be a glossy insignia white dope, conforming to Specification AN-D-2.

### b. CLEANING.

(1) GENERAL.—All surfaces shall be thoroughly clean and dry at the time of application of any paint coating. Surfaces to be coated should be conditioned in an atmosphere of sufficiently low humidity to insure that the surfaces are free from any evidence of moisture.

Cleaning shall be accomplished with a suitable solvent or with a detergent of a type which is completely soluble in cold water.

**CAUTION**

Petroleum solvents are highly inflammable and should be used with extreme care.

When cleaning the surfaces of the airplane, a cleaning agent should be used which will remove a minimum of the primer coat. A warm synthetic soap solution or synthetic soap compound is most suitable for this purpose. If hydrocarbon solvents are used for cleaning, they should be non-aromatic derivatives having the lowest solvency values obtainable in order that a minimum amount of the original finish will be removed. Do not allow any traces of solvent to remain on or in the seams of aluminum alloy parts.

(*a*) Apply the initial protective coating to all parts immediately after cleaning.

(*b*) Do not use steel wool or carbon tetrachloride in cleaning aluminum or magnesium alloy parts.

(*c*) Precautions shall be taken in the fabrication and assembly of materials, particularly in relatively inaccessible sections, to insure that metal particles, especially those of a dissimilar character, do not

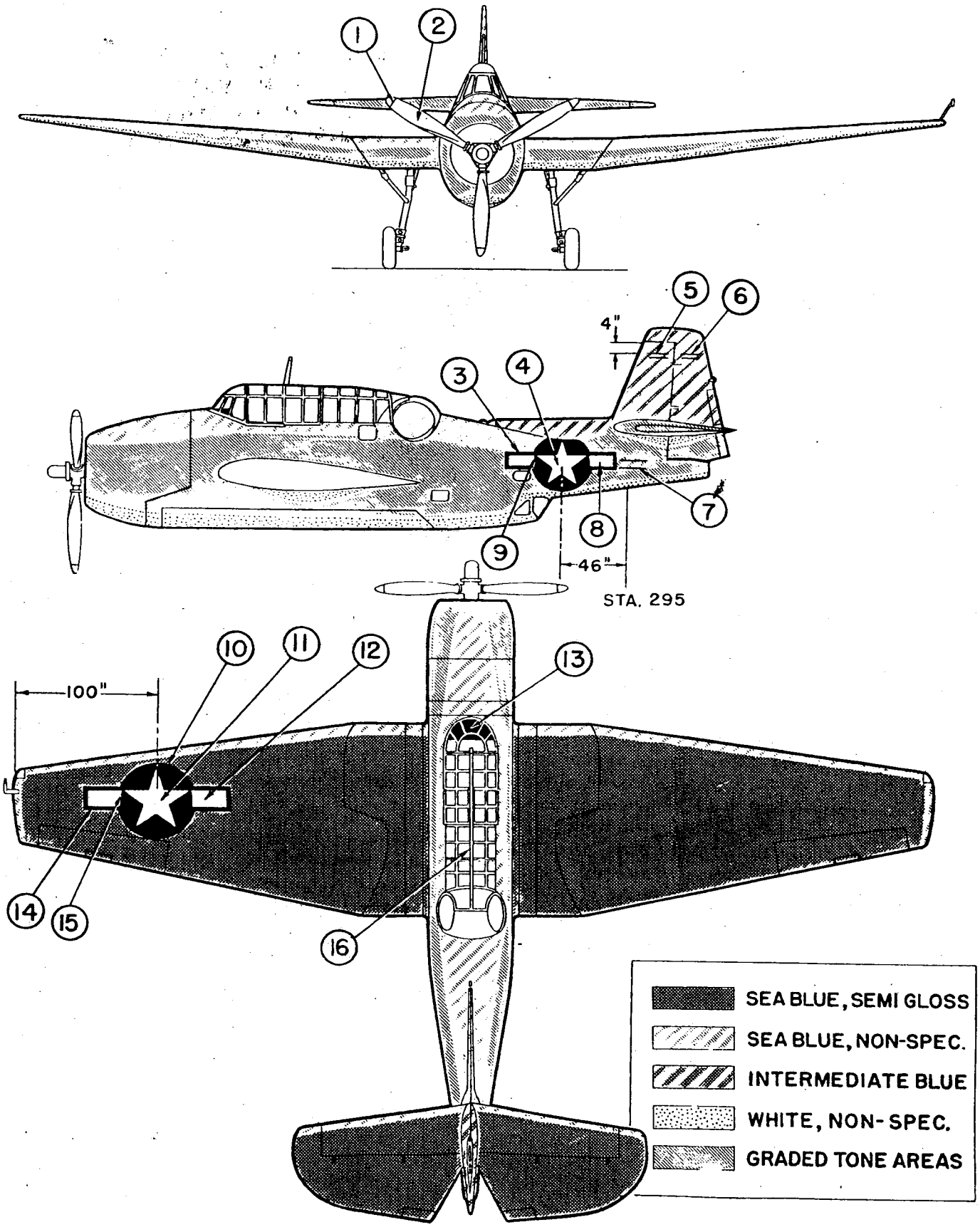



*Figure 444 — Finish and Insignia*

| Ref. No. | Description |
|---|---|
| 1. | Orange Yellow Band at tip, 4 inches wide |
| 2. | Non Specular Black |
| 3. | Insignia Blue Border, 2½ inches wide |
| 4. | Insignia White Star |
| 5. | Bureau Serial Number, 1 inch high |
| 6. | Model Number, 1 inch high |
| 7. | Service Marking, 4 inches high |
| 8. | Insignia White Area 10″ x 20″ |
| 9. | Inner Circle, Insignia Blue, 40 inches diameter |
| 10. | National Insignia located on top of Left Wing and bottom of Right Wing |
| 11. | Insignia White |
| 12. | Light Gray Area 12½″ x 25″ (Insignia White on bottom of Right Wing) |
| 13. | Non Specular Black Top Surface Inside Windshield Only |
| 14. | Insignia Blue Border, 2⅛″ Wide |
| 15. | Inner Circle, Insignia Blue (Non Specular), 50 inches Diameter |
| 16. | Canopy and Radio Mast, Intermediate Blue |



GENERAL NOTES

1 All Exterior Finishes to be in accordance with U.S. Navy Spec. SR-2C and Bureau Aer Letter 14708 Aer-E-2574-MVS.
2 Graded Tone Areas shall be a Gradual Transition from Non-Specular Sea Blue to Non-Specular White in accordance with paragraph D-3B(7) (A&B) of U.S. Navy Spec. SR-2C.
3 Paint Horizontal Airfoil Surfaces Viewed from below Non-Specular White in accordance with paragraph D-3B(2) of U.S. Navy Spec. SR-2C.
4 Gray on upper left wing Insignia shall be obtained by mixing one volume each of Light Gray and Insignia White Material.

remain lodged behind frames or stringers by becoming partially imbedded in the organic coatings. A vacuum cleaner providing strong suction should be employed for cleaning operations in such areas.

**WARNING**

Do not touch cleaned parts with the hands or dirty rags before the parts have been painted. High octane aviation fuel must not be used for cleaning parts. The lead which is added to this fuel is poisonous in open cuts and wounds, and the fumes are injurious to the lungs if inhaled in large quantities.

(2) CLEANING ALUMINUM ALLOYS.

(*a*) Before applying primer coats, clean the aluminum and aluminum alloy parts with a suitable solvent.

**CAUTION**

Unpainted aluminum and aluminum alloy parts which have been anodized must be handled with extreme care to avoid scratching the soft anodic film. Scratches in this protective film may lead to corrosion.

(*b*) Clean welded aluminum alloy parts as soon as practicable after welding so as to insure complete removal of the welding flux in order to prevent serious corrosive attack. All excess flux may be removed from the part by washing with water, and then immersing the part in a 10% solution (by weight) of sulphuric acid for a period of one hour or for a lesser time sufficient to remove all traces of flux, making sure that all relatively inaccessible surfaces are in contact with the solution. After removal from the acid, the part should be washed in fresh running water until it is thoroughly free from all traces of the acid bath.

**WARNING**

In mixing the sulphuric acid solution, pour the acid slowly into the water and stir with a wooden paddle. Never pour water into the acid. If any sulphuric acid comes in contact with the skin, wash the area affected immediately in cold running water. A burn will result unless the acid is immediately washed off.

(3) STEEL.

(*a*) Remove machine oil and grease from steel surfaces with benzol, naphtha or other suitable organic solvents.

(*b*) Remove oxidation scales with a wire brush.

(4) CLEANING TRANSPARENT PLASTIC ENCLOSURES.

(*a*) EXTERIOR SURFACES.

*1.* Flush with plenty of water, using the bare hand gently to feel and dislodge any dirt, salt or mud.

*2.* Wash with soap and water. Be sure the water is free of dirt or other possible abrasives. A soft cloth, sponge or chamois may be used in washing, but only as means of carrying soapy water to the plastic. Go over the surfaces only with the bare hand so that any dirt can be quickly detected and removed before it scratches the plastic surface.

*3.* Dry, preferably with a clean damp chamois, however, a soft clean cloth or soft tissues may be used if care is taken not to continue rubbing the acrylic plastic after it is dry.

*4.* Remove oil and grease by rubbing lightly with a cloth wet with kerosene or hexane.

**CAUTION**

Do not use the following materials on acrylic plastics: acetone, benzene, carbon tetrachloride, fire extinguisher fluids, gasoline, lacquer thinners or window cleaning sprays because they will soften the plexiglas and cause crazing.

*5.* Do not rub the acrylic plastic with a dry cloth since this is not only likely to cause scratches, but it also builds up an electrostatic charge which attracts dust particles to the surface. If the surface does not become charged, patting or gently blotting with a clean damp chamois will remove this charge as well as the dust.

*6.* If after removing dirt and grease, no great amount of scratching is visible, the plastic should be waxed with a good grade of commercial wax. These waxes will fill in minor scratches and help prevent further scratching. The wax should be applied in a thin even coat and brought to a high polish by rubbing lightly with a soft dry cloth.

*7.* If, after removing dirt and grease, the plastic surface is found marred by scratches, apply suitable polish by hand; or if buffing equipment is available, buff out the scratches. Then apply a coat of wax to the polished surface.

**CAUTION**

Do not attempt either hand polishing or buffing until the surface is clean. If dirt, grit or sand are present during these operations they may cause more serious damage than the original scratches. (Since even skillful sanding, buffing, and polishing introduce slight optical distortions, these operations should not be performed on gun turret sighting panels, and similar critical optical parts. These parts should be washed and waxed only. If they are damaged by a number of deep scratches, they should be replaced.)

(*b*) INTERIOR SURFACES.

*1.* Dust the plastic surface lightly with a soft clean cloth. Do not *wipe* the surface with a dry cloth.

*2.* Wipe carefully with a soft damp cloth or sponge. Keep the cloth or sponge free of grit by rinsing it frequently in clean water.

(*c*) MAINTENANCE AND REPAIR OF TRANSPARENT PLASTICS.—It is recommended that existing instructions be consulted for information on other maintenance and repair procedures and for a complete list of recommended materials.

**c. ORGANIC PROTECTIVE COATINGS.**

Before applying any paint-type protective coating, clean the surface as outlined above. All surfaces should be thoroughly clean and dry before applying any paint coating.

If possible paint coatings should be applied in warm air conditioned rooms of low humidity. Conditions should be such that drying takes place as rapidly as possible without blushing. Coatings should not be applied under unfavorable atmospheric conditions, such as high humidity, strong drafts, or moist sea breezes.

Specifications PF-9 is to be used as a guide in the application of the primer. All finishes are to be applied by the spray gun or dip method. Each coat of paint shall be thoroughly dry before application of another coat. Wherever dipping can be used, it should be employed in preference to the spray gun method.

***d.* EXTERIOR SURFACES.**

(1) Apply one coat of zinc chromate primer, Specification AN-TT-P-656 to all aluminum alloy parts before applying glossy sea blue or camouflage lacquer, Specification AN-TT-L-51.

(2) The finish of the exterior metal surfaces and the finish of the insignia and markings shall consist of two coats of glossy sea blue (glossy insignia white on the insignia and markings) or camouflage lacquer in addition to the primer coat. For color scheme and layout for the first 1623 TBM-3 airplanes refer to Figure 444.

(3) Apply the insignia and all identification markings with glossy insignia white lacquer, conforming to Specification AN-TT-L-51.

(4) Steel parts which have been cadmium plated should be finished with one coat of zinc chromate

primer followed with two coats of glossy sea blue or camouflage lacquer. Steel parts which have not been cadmium plated should be sand blasted and then painted with two coats of zinc chromate primer, followed by one coat of glossy sea blue or camouflage lacquer.

(5) Fabric covered surfaces shall be doped in accordance with Navy Aeronautical Specification SR-70.

(6) Zinc Dimethyldithiocarbomate shall be used as a fungicide for mildewproofing fabric surfaces. This material is only to be used as an additive for the first coat of dope. Each gallon of thinned clear dope shall contain four (4) ounces of Zinc Dimethyldithiocarbomate. It is recommended that the required amount of thinner necessary to reduce one gallon of dope be added to a weighed portion of Zinc Dimethyldithiocarbomate. All other conditions of doping remain the same and are not affected by the presence of this chemical in the first coat.

(7) Dope all fabric surfaces with cellulose acetate butyrate dopes, both clear and pigmented, in accordance with Specifications AN-D-1 and AN-D-2.

(8) No finish, grease, or oil is necessary for exterior plastic surfaces.

### e. INTERIOR SURFACES.

(1) Apply one coat of zinc chromate primer Specification AN-TT-P-656, and one coat of tinted zinc chromate primer to all interior surfaces, including the forward surfaces of the firewall and the engine structures. In addition to the zinc chromate primer, apply two coats of black lacquer to the instrument panels and the interior of the cowling.

(2) Apply at least two coats of zinc chromate primer, Specification AN-TT-P-656 and two coats of lacquer, Specification AN-TT-L-51, to all magnesium and magnesium alloy parts.

(3) Steel parts which are not cadmium plated shall be sand blasted and then painted with two coats of zinc chromate primer, followed by one coat of tinted zinc chromate primer.

(4) Finish all interior surfaces in the battery compartment, to within 12 inches of storage batteries or parts further removed which are subject to acid spillage or spray, with two additional coats of black acid proof paint, Specification AN-P-31.

(5) Coat all steel cables by immersion in a solution of corrosion preventive compound, conforming to Specification AN-C-52, prior to installation. Coat the cables lightly with the corrosion preventive compound after installation. Protect cable fittings, except those fabricated from corrosion resisting steel alloys or K-Monel, with two coats of zinc chromate primer and one coat of tinted zinc chromate primer.

(6) Where there is contact between dissimilar metals, apply two coats of zinc chromate primer on each surface of contact. Wherever assembly permits, the joint between dissimilar metals shall be filled with a corrosion inhibiting plastic sealing compound, such as zinc chromate tape or paste. Remove all excess compound after forming a clean fillet around the joint.

(7) No finish, grease, or oil is necessary for plastic, glass, or rubber surfaces. Phenolic materials or similar plastics may be painted to match adjacent surfaces.

(8) Threads of adjustable parts, such as tie rods and turnbuckles, shall be lubricated before and after installation with a corrosion preventive compound conforming to Specification AN-C-52, in order to protect and lubricate these parts and eliminate seizure.

(9) All parts of wood shall be coated with hot raw linseed oil.

### f. CORROSION PREVENTION OF STEEL PARTS IN STORAGE AND SHIPMENT.

The following measures shall be taken to prevent corrosion of steel parts which are to be stored or shipped:

(1) On painted parts where it is necessary to mask small unprotected areas for bonding, grounding, etc., these areas shall be masked prior to painting with non-hygroscopic adhesive tape conforming to Specification AN-T-12. Utilitape, manufactured by the Industrial Tape Corporation, New Brunswick, New Jersey, meets this specification.

(2) All other unprotected surfaces shall be treated with a mixture of one part Varsol, manufactured by the Standard Oil Company of New Jersey, and one part Ferrocote TF 349, manufactured by the Quaker Chemical Company, Conshohocken, Pennsylvania.

**Note**

Peroline No. 3, manufactured by the American Chemical Paint Company, Ambler, Pennsylvania, or Safco Rust Preventive, manufactured by Swan-Finch Oil Corporation, Buffalo, New York, may be used as alternate material for Ferrocote TF 349.

(3) Parts which are cadmium plated, zinc plated, chromium plated and/or painted on all surfaces will not require such treatment.

### g. ANTI-SEIZE COMPOUNDS.

(1) MECHANICAL SEAL.—Use Shell Industrial No. 2,938-B thread lubricant, or equivalent, on all threaded fittings that carry air or carbon dioxide and on fittings which carry petroleum products where the fluid does not come into direct contact with the threads, i.e., where mechanical seal is made.

(2) LIQUID SEAL.—Use Parker Sealube thread lubricant or other seal conforming to Specification AN-C-53 on all threaded fittings which carry gasoline, engine oil, anti-icer fluid, or hydraulic fluid, in which the fluid comes into direct contact with the thread lubricant.

**CAUTION**

Apply thread lubricant to the male threads only, and apply in such a manner that no excess lubricants enter the line.

(3) ELECTRICAL CONDUITS.—Use Parker Sealube thread lubricant, or equivalent on all threaded fittings used in the electrical system.

(4) OXYGEN LINE FITTINGS.—Seal oxygen line fittings with Rectol Seal No. 8 or 15.

**WARNING**

Never use oil or grease on oxygen line connections as this constitutes a fire hazard.

### h. PROTECTION OF RUBBER TIRES.

The landing gear tires will wear much longer if washed with soap and water every 30 hours.