TECHNICAL MANUAL

AVIATION UNIT MAINTENANCE(AVUM) AND AVIATION INTERMEDIATE MAINTENANCE (AVIM) MANUAL

NONDESTRUCTIVE INSPECTION PROCEDURES FOR UH-1 HELICOPTER SERIES

HEADQUARTERS, DEPARTMENT OF THE ARMY

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Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual Nondestructive Inspection Procedures for UH-1 Helicopter Series

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished to you.

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SECTION I

INTRODUCTION

1. INTRODUCTION.

a. This manual contains instructions for accomplishing Nondestructive Inspection (NDI) of the UH-1 helicopter series at the AVUM and AVIM levels. The procedures described in this manual are intended to provide instructions for the NDI of locations where service defects would prevent items from performing their designated functions, and of components for serviceability. These procedures were developed through review of UH-1 Technical Manual inspection requirements. The goal is to upgrade these requirements wherever possible using NDI methodology to improve inspection quality, decrease inspection time, and increase systems operational readiness. Other factors involved were maintenance engineering analysis, experience, and comparison with similar installations. Procedures shall be reviewed and changes and additions made during the service life of the equipment by continually evaluating the following: performance of the equipment, results of scheduled inspections, and thorough study of failure data. Local conditions, such as special utilization of climatic environment, may dictate more detailed inspections. Commanders and their maintenance officers are expected to exercise their prerogative to increase the frequency and scope of any inspection as required.

b. This manual may pertain to part, or all types and series, of a model, and may, therefore, contain requirements applicable to specific equipment that is not installed on an individual model. When this situation is encountered, those requirements that are not applicable should be disregarded.

c. This manual does not contain inspection level or frequency, acceptance and rejection limitations, nor instructions for correcting defective conditions. Inspection levels and frequency are provided in the inspection requirements manuals. Detailed acceptance and rejection criteria and instructions for correcting defective conditions are provided in applicable maintenance manuals and are, therefore, not contained in this manual. Decisions regarding the serviceability of components properly belong with maintenance technicians trained, skilled, and experienced in their particular specialty, such as airframe, hydraulic, or propulsion. Also, it would duplicate existing information and make the task of incorporating the numerous changes to inspection frequency and repair instructions impractical.

d. The inspection requirements are stated in such a manner as to address the following: (1) What part or area is to be inspected? (2) What conditions are to be sought? (3) What NDI method is to be used? (4) How is the method to be performed? In scope, the inspection procedures are designed to direct attention of maintenance personnel to components and areas where service defects can occur. The procedures also provide detailed instructions on the application of NDI in an effort to ensure the serviceability of these areas.

e. Nondestructive inspection methods require application by trained, experienced, and proficient technicians. This manual provides detailed procedures for the application of nondestructive methods to inspect specific areas or locations. However, it must be emphasized that the reliability of the inspection depends upon the proper evaluation of the results obtained from the inspection equipment.

f. While using this manual, such adjectives as left and right, upper and lower, front and rear, forward and aft, and clockwise and counterclockwise refer to the helicopter as viewed from the rear (aft), looking forward.

g. Changes and supplements to this manual will be published when necessary to add, delete, or change the scope of requirements. Such changes will be based on factual data accumulated as a result of maintenance experience with the equipment. Suggested new or revised field developed inspection procedures or changes to this manual are encouraged and should be made by submitting -L a DA Form 2028. Mail to: U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798.

h. These NDI procedures are directive in nature, and deviation without prior approval is limited to compensation for differences in equipment output. Equipment settings, when given, are reference points only, due to the widely varying outputs from different inspection equipment. The condition that must be satisfied for accurate inspection is that the inspection equipment be adjusted to obtain the specified response from the set-up or defect standard, or the specified density reading on radiographic film. Trained NDI technicians are qualified to make these adjustments.

1.1 GENERAL INFORMATION.

CAUTION

Misinterpretation of indications can result in rejectable parts being accepted and acceptable parts being rejected. Only NDI personnel trained and qualified in accordance with applicable military standards and technical manuals shall perform and interpret nondestructive inspections.

a. This manual provides necessary information to enable qualified personnel to perform NDI on UH-1 helicopter series. The selection of components in this manual is based on a review of applicable technical manuals listed in Table 1-1. All existing NDI callouts were updated. New NDI procedures were developed for those parts that required check, inspect, or any other NDI related actions. Section I of this manual contains a list of special terms, abbreviations, acronyms, information on how to use the manual, use of NDI symbols, and a list of publications. Section I also contains general information on the UH-1 helicopter series, including descriptive data, access panels, major assemblies, stops, handholds, walkways, various NDI method descriptions, and rules of safety to be observed during nondestructive inspections.

b. Additional information on inspection methods can be found in the Technical Manual, Nondestructive Inspection Methods, TM 55-1500-335-23. Detailed inspection instructions for each main aircraft group are given in Sections II through VI of this manual.

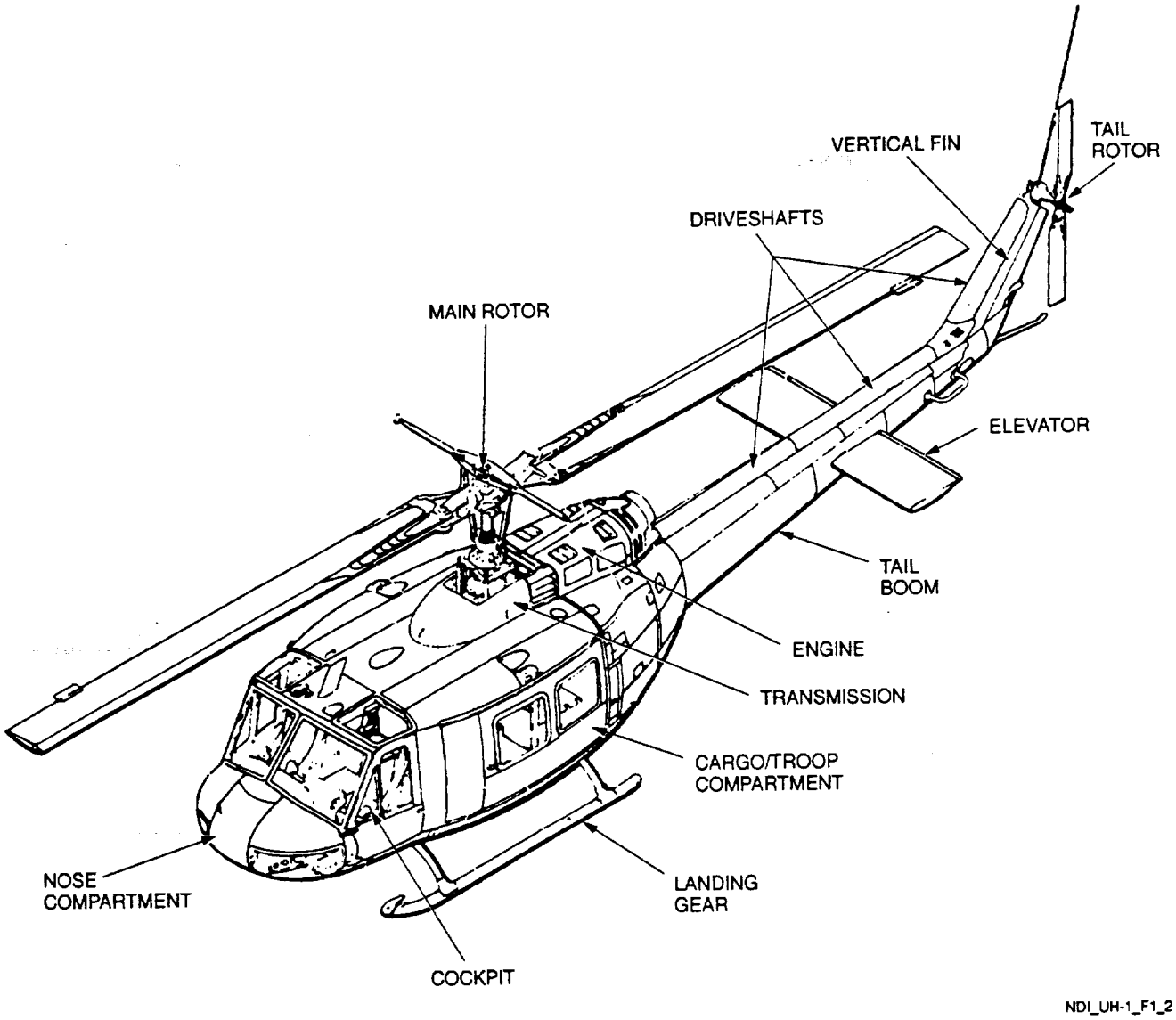

Figure 1-2. General Configuration of UH-1 Helicopter

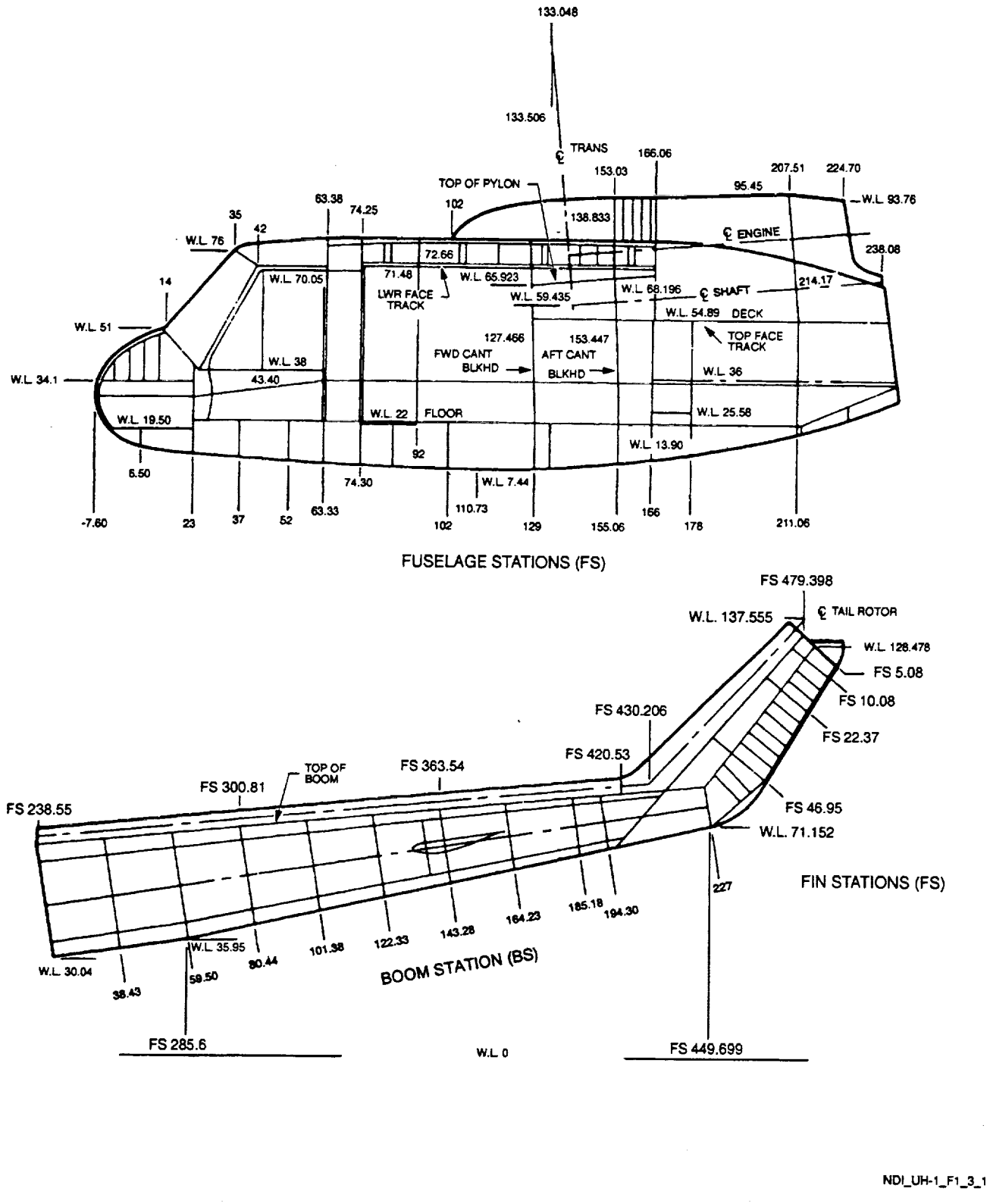

Figure 1-3. Station, Water, Buttock, and Fin Station Lines (Sheet 1 of 2)