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MIL-DTL-5920G(USAF)  
w/AMENDMENT 1  
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SUPERSEDING  
MIL-DTL-5920G  
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# **DETAIL SPECIFICATION MANUALS, TECHNICAL - SAMPLE BASIC WEIGHT CHECKLISTS AND LOADING DATA**



Comments, suggestions, or questions on this document should be addressed to AFLCMC/HIAM Technical Data Section, 4170 Hebble Creek Road, Bldg. 280, Door 15, Area A, Wright-Patterson AFB, OH 45433-5653 or emailed to [SGMLsupport@us.af.mil](mailto:SGMLsupport@us.af.mil). Since contact information can change, the currency of this address information should be verified using the ASSIST Online database at <https://assist.dla.mil/>.

AMSC N/A

AREA TMSS

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This detail specification is approved for use by the Department of the Air Force and is available for use by all Departments and Agencies of the Department of Defense.

### 1 SCOPE

1.1 Scope. This detail specification covers the preparation of the Sample Basic Weight Checklists and Loading Data aircraft manuals. These manuals consist of TO 1X-XXXX-5-1, Sample Basic Weight Checklists (Chart A) and TO 1X-XXXX-5-2, Loading Data (Chart E) as approved for use in TO 1-1B-50 and development under provisions of SAWE-RP7 (previously MIL-W-25140). This specification provides for electronic delivery of data through the use of the Document Type Definitions (DTD) contained in Appendixes A and B.

### 2 APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections and of this specification, whether or not they are listed.

#### 2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2b).

#### DEPARTMENT OF DEFENSE STANDARDS

##### MIL-STD-38784

Manuals, Technical: General Style and Format Requirements

(Copies of federal and military specifications, standards and handbooks are available at <http://quicksearch.dla.mil/> or from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2.2 Other government documents, drawings, and publications. The following other government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

#### PUBLICATIONS

#### AIR FORCE TECHNICAL MANUALS

##### TO 00-5-3

Technical Order Life Cycle Management

##### TO 1-1B-50

Basic Technical Order for USAF Aircraft Weight and Balance

(Copies of these documents required by users with "mil" government web address access are available online at <https://www.my.af.mil/etims/ETIMS/index.jsp>. Refer to helpdesk information if obtaining copies without a TO subscription account. Copies of documents required by contractors in connection with specific procurement functions should be obtained from the acquiring activity or as directed by the contracting officer.)

2.3 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

#### SOCIETY OF ALLIED WEIGHT ENGINEERS

##### SAWE-RP7

Mass Properties Management and Control for Military Aircraft.

(Copies of SAWE recommended practices should be addressed to the Society of Allied Weight Engineers, P.O. Box 60024, Terminal Annex, Los Angeles, CA 90060 or <https://www.sawe.org/>)

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2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3 REQUIREMENTS

3.1 Source of technical data. Charts A and E shall be used as the contents of TO 1X-XXXX-5-1 (Sample Basic Weight Checklists) and TO 1X-XXXX-5-2 (Loading Data) manuals for the applicable Type/Model/Series aircraft or rotorcraft (see 6.2c). The contractor shall prepare this data, using SAWE-RP7, for Air Force completion of the Weight and Balance Handbook. This data shall be for representative or individual aircraft as specified in TO 1-1B-50.

3.2 Development and preparation. The general manner of development and preparation for manuals shall be in accordance with the requirements of MIL-STD-38784.

3.3 Sample basic weight checklists (TO 1X-XXXX-5-1).

3.3.1 Sample basic weight checklists manual arrangement. The DTD is available at the TMSS website (see A.2.1). If electronic delivery of this manual is required see 6.2d. Each sample Basic Weight Checklists manual shall consist of the following:

- a. Front Matter
- b. Chapter 1 - Introduction
- c. Chapter 2 - Sample Basic Weight Checklists (Chart A)

3.3.1.1 Front matter. Unless otherwise specified by the acquiring activity (see 6.2e), illustrations of the Chart A item locations shall be included. The front matter shall consist of a title page and table of contents in accordance with the requirements of MIL-STD-38784. The following is an exception to the general front matter requirements:

Electronic Presentation: The front matter shall include a list of changes.

Printed Presentation: The front matter shall include a list of effective pages. The sample Basic Weight Checklists and diagrams shall be legible, either when the manual is viewed vertically (normal reading position), or when the manual is rotated 90 degrees clockwise from the vertical position. Unless otherwise specified by the acquiring activity, illustrations of the Chart A item locations shall be included, and shall be inserted as a facing page to the corresponding items listing (see figure 3 and 6.2e).

3.3.1.1.1 Sample basic weight checklists title. The words "SAMPLE BASIC WEIGHT CHECKLISTS" shall be used as the type of publication. The aircraft type designation shall be used as the prime title.

3.3.1.1.2 Chapter 1 - Introduction. Chapter 1 shall contain the introduction requirements of MIL-STD-38784. In addition, it shall include an explanation of how to use and maintain the sample Chart A, and create a new Chart A (see figure 1).

3.3.1.1.3 Chapter 2 - Sample Basic Weight Checklists (Chart A). Chapter 2 shall begin by identifying the sample Basic Weight Checklists contained in the manual (see figure 2). The remainder of Chapter 2 shall consist of the sample Basic Weight Checklists. These lists shall be identical to the final approved Chart A, as specified in 3.1, except that the words "Sample Only" shall be printed immediately following the aircraft Type/Model/Series designation in the Model/Design/Series block and the "RECORD OF CHECKING" columns shall be blank.

3.4 Loading Data (TO 1X-XXXX-5-2). Print presentation: Loading Data, charts, tables, and diagrams shall be legible either when the manual is viewed vertically (normal reading position), or when the manual is rotated 90 degrees clockwise from the vertical position.

3.4.1 Loading Data Manual arrangement. The DTD is available at the TMSS website (see B.2.1). If electronic delivery of this manual is required see 6.2d. Each Loading Data manual shall consist of the following:

- a. Front Matter
- b. Chapter 1 - Introduction

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### c. Chapter 2 - Loading Data

3.4.1.1 Front matter. The front matter shall consist of a title page, list of effective pages, table of contents, list of illustrations, and list of tables in accordance with the requirements of MIL-STD-38784, with the following exceptions.

3.4.1.1.1 Loading data title. The words "LOADING DATA" shall be used as the type of publication. The aircraft type designation shall be used as the prime title.

3.4.1.2 Chapter 1 - Introduction. Chapter 1 shall contain the introduction requirements of MIL-STD-38784. In addition, it shall include a weight and balance classification reference, and an explanation of how to use the Chart E (see figure 4).

3.4.1.3 Chapter 2 - Loading Data. Chapter 2 shall begin by delineating weight and balance control requirements, aircraft weighing requirements and intervals, and the contained Loading Data (Chart E). The weighing intervals shall be determined by the acquiring activity (see 6.2f and figures 5 and 6). The remainder of Chapter 2 shall consist of the Loading Data identical to the final approved Chart E as specified in 3.1. Chart E shall begin with general aircraft weighing instructions, aircraft diagram, and general notes affecting aircraft loading. The remaining Chart E content, such as loading tables, graphs, etc., shall appear in the order of use on the Form F - Weight and Balance Clearance Form (see TO 1-1B-50, DD Form 365-4), as represented in figures 5, 6, and 7. Necessary Chart E additions or deletions shall be made as specified or approved by the acquiring activity (see 6.2g).

3.4.1.3.1 Maintaining manuals. When required by the acquiring activity, (see 6.2h and figure 5). Weight and Balance personnel (per TO 1-1B-50) will maintain a current Weight and Balance Handbook for each representative aircraft. A representative aircraft is one which serves to represent all aircraft that are within +/- percent MAC of gravity and +/- pounds of the representative aircraft basic weight center of gravity location and basic weight. To satisfy these criteria, more than one representative aircraft may be required for proper weight and balance monitoring of all assigned aircraft.

3.4.1.3.1.1 Weighing record. After completion of the Aircraft Weighing Record (see TO 1-1B-50 DD Form 365-2), forward one copy to (list the address of the Logistic Center which is assigned to the maintenance engineering management responsibility for the aircraft) as determined by the acquiring activity (see 6.2i). See figures 5 and 6.

3.4.1.3.1.1.1 Specific weighing requirements. When required by the acquiring activity, specific weighing requirements such as after engine change, etc., will be specified as subparagraphs (see 6.2j). See figures 5 and 6.

## 4 VERIFICATION

4.1 Verification. When the technical data produced according to this specification is offered for acceptance, all tests, reviews, and verifications required by the acquiring activity to determine that it conforms to the requirements in section 3 of the specification, shall be performed as specified in the solicitation or contract. The Air Force Technical Order Policy and Procedures (AF TOPP) team, AFMC/A4FI provides the specific requirements for verification of technical data developed and delivered through this specification, as well as guidance for including these requirements in the solicitation or contract (see TO 00-5-3, 2.2.2).

4.2 Compliance. Technical Manuals (TMs) shall meet all requirements of Section 3 of this specification and the applicable DTD appendix, as specified by the acquiring activity (see 6.2). The requirements set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any requirements in this specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies, submitted to the government for acceptance, comply with all requirements of the contract. Use of sampling inspections shall be at the discretion of the contractor, and in accordance with commercially acceptable quality assurance procedures. However, use of sampling in QA procedures does not authorize submission of known defective material, either indicated or actual, nor does it commit the government to accept defective material.

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### 5 PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2k). When packaging of material is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the military system command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

### 6 NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory).

6.1 Intended use. The technical manuals prepared in accordance with this document provide required information to service activities for the preparation of checklists that will be inserted into the Weight and Balance Handbook for individual aircraft. The necessary Loading Data and restrictions required to complete DD Form 365-4 (see TO 1-1B-50) will also be provided. These manuals provide guidance and instruction for specific Type/Model/Series aircraft to better facilitate compliance with weight and balance requirements as needed for the unique operating environment for military aircraft. In addition, the Sample Basic Weight Checklists and Loading Data manuals serve as the baseline for updating individual aircraft Weight and Balance Handbooks per TO 1 1B-50.

6.2 Acquisition requirement. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. If required, the specific issue of individual documents referenced (see 2.2.1).
- c. Charts A and E, as approved by the acquiring activity engineering personnel (see 3.1).
- d. If electronic delivery of the manuals is required (see 3.3.1 and 3.4.1).
- e. If illustrations of the Chart A item locations are to be other than as specified in this document (see 3.3.1.1 and 3.3.1.3)
- f. The weighing intervals to be included (see 3.4.1.3).
- g. If Chart E additions or deletions are to be made (see 3.4.1.3).
- h. If representative aircraft are within + percent MAC CG and + pounds and a handbook will be maintained (see figure 5) or (see 3.4.1.3.1).
- i. Address of logistics center assigned maintenance engineering responsibility for the specific type aircraft (see 3.4.1.3.1.1).
- j. If specific weighing requirements are to be specified as subparagraphs (see 3.4.1.3.1.1.1).
- k. Packaging requirements (see 5.1).

6.3 Technical manual. The requirement for technical manuals should be considered when this specification is applied on a contract. If technical manuals are required, specifications and standards that have been authorized and assigned an Acquisition Management Systems Control (AMSC) number must be listed on a separate Contract Data Requirements List (see TO 00-5-3, DD Form 1423), which is included as an exhibit to the contract. The technical manuals must be acquired under separate contract line item in the contract.

6.4 Acronyms. The acronym(s) used in this document are defined as follows:

<b>AFI</b>	Air Force Instruction
<b>ASSIST</b>	Acquisition Streamlining and Standardization Information System
<b>AWBS</b>	Automated Weight And Balance System
<b>CG</b>	Center of Gravity
<b>DD</b>	Defense Department

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<b>DOD</b>	Department of Defense
<b>DTD</b>	Document Type Definition
<b>MAC</b>	Mean Aerodynamic Chord
<b>TCTO</b>	Time Compliance Technical Order
<b>TO</b>	Technical Order

6.5 Definitions. To clarify the terms used throughout this specification, the following definitions are given:

6.5.1 Mean Aerodynamic Chord. An engineering term which represents an airfoil's chord in aircraft design. It is a constant length which is used in the calculation of center of gravity locations in terms of percent of MAC.

6.6 Aircraft weight and balance classification. Aircraft weight and balance classifications (Class 1 and Class 2 aircraft) are defined in SAWE-RP7 (previously MIL-W-25140) and TO 1-1B-50.

6.7 Automated Weight And Balance System (AWBS). For information concerning AWBS see TO 1-1B-50.

6.8 Charts A and E. Chart A is the DD Form 365-1 (see TO 1-1B-50), Basic Weight Checklist Record. Chart E is not a standard form, but may be any of the graphs, charts, or tables that are contained in TO 1X-XXXX- 5-2 that provides loading data.

6.9 Subject term (key word) listing.

Arm  
Chart A  
Chart E  
Class 1 Aircraft  
Class 2 Aircraft  
DD Form 365  
Form F  
Loading Data  
Moment  
Weight and Balance  
Percent MAC

6.10 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.



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## CHAPTER 1 INTRODUCTION

### 1.1 PURPOSE AND SCOPE.

This technical manual contains Sample Basic Weight Checklists (Charts A) which are applicable to model F-15 aircraft. These charts are intended to assist using personnel in complying with the requirements of TO 1-1B-50 by providing data for insertion into the Weight and Balance Handbook.

### 1.2 HOW TO USE SAMPLE CHARTS A.

The Sample Charts A are tabulations of all fixed operating equipment items which have definite locations, may be installed, or are alternate installations for standard equipment items in the aircraft. The weight, arm, and simplified moment are given for each Chart A item. The Sample Charts A presented herein are intended to be used only as a guide in preparing a new Basic Weight Checklist for insertion into the Weight and Balance Handbook for representative or individual aircraft. Do not use sample Chart A to inventory equipment on the aircraft. Detailed procedures for preparing and maintaining Basic Weight Checklists (Chart A) are contained in TO 1-1B- 50.

### 1.3 CREATING NEW CHARTS A.

When it is necessary to create a new Chart A, use the enclosed Sample Basic Weight Checklist in the Weight and Balance Handbook by deleting or crossing out the words "SAMPLE ONLY" on each page, and adjusting the items to match the individual aircraft configuration. Do this by crossing out those items not applicable to the aircraft, and adding new items, as appropriate. When the Sample Basic Weight Checklists are converted to the individual aircraft configuration, maintain it as a checklist, not as part of TO 1X-XXXX-5-1.

### 1.4 ROUND OFF.

The weights and arms are rounded to whole numbers. Simplified moments are rounded to one decimal place. Use the arm for inventorying the aircraft, and the weight and moment for weight tracking. Because of the round off error, multiplying weight times arm may not reflect the published moment; likewise, a moment divided by weight may not reflect the published arm.

### 1.5 RECORD OF APPLICABLE TIME COMPLIANCE TECHNICAL ORDERS (TCTO).

The record of applicable time compliance technical orders is a list of all TCTOs which affect the technical content (text or illustrations) of this manual. The Change/Revision/Supplement Data column lists the date of issue when each change was (or will be) incorporated into this manual. Only currently effective changes are listed. A TCTO is deleted from the list when either the applicable equipment configuration is no longer covered in the publication, or it is rescinded, superseded, or replaced.

### 1.6 YOUR RESPONSIBILITY TO LET US KNOW.

Every effort is made to keep the manual current; however, we cannot correct an error unless we know of its existence. In this regard it is essential that you do your part. Comments, corrections, and questions regarding this manual, or any phase of the basic weight and loading data, are welcome. These should be forwarded on AF Form 847 as directed by AFI 11-215 through your command headquarters.

**FIGURE 1. Example chapter 1 introduction – sample Basic Weight Checklist manual.**

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**CHAPTER 2 SAMPLE BASIC WEIGHT CHECKLISTS  
(CHARTS A)**

**2.1 PURPOSE.**

The Sample Basic Weight Checklists contained herein are to be used only as guides for preparing new Charts A for insertion into the Weight and Balance Handbook for representative or individual aircraft. Preparation procedures for Chart A are found in T.O. 1-1B-40.

**2.2 SAMPLE CHART A, F-15A, 72-113 THRU 72-115 AND 72-119.**

Figure 2-1 contains Chart A data which reflects an aircraft configuration which is representative of Air Force Serial Number 72-113 thru 72-115 and 72-119 aircraft. The physical location of each fixed equipment item is shown in the view on the facing page opposite the Chart A listing.

**2.3 SAMPLE CHART A, F-15A 73-085 AND UP.**

Figure 2-2 contains Chart A data which reflects an aircraft configuration which is representative of Air Force Serial Number 73-085 and up aircraft. The physical location of each fixed equipment item is shown in the view on the facing page opposite the Chart A listing.

**2.4 SAMPLE CHART A, TF-15A 73-108 AND UP.**

Figure 2-3 contains Chart A data which reflects a model TF-15A aircraft configuration and is representative of Air Force Serial Number 73-108 and up aircraft. The physical location of each fixed equipment item is shown in the view on the facing page opposite the Chart A listing.

**FIGURE 2. Example chapter 2 lead-in, sample Basic Weight Checklists manual.**



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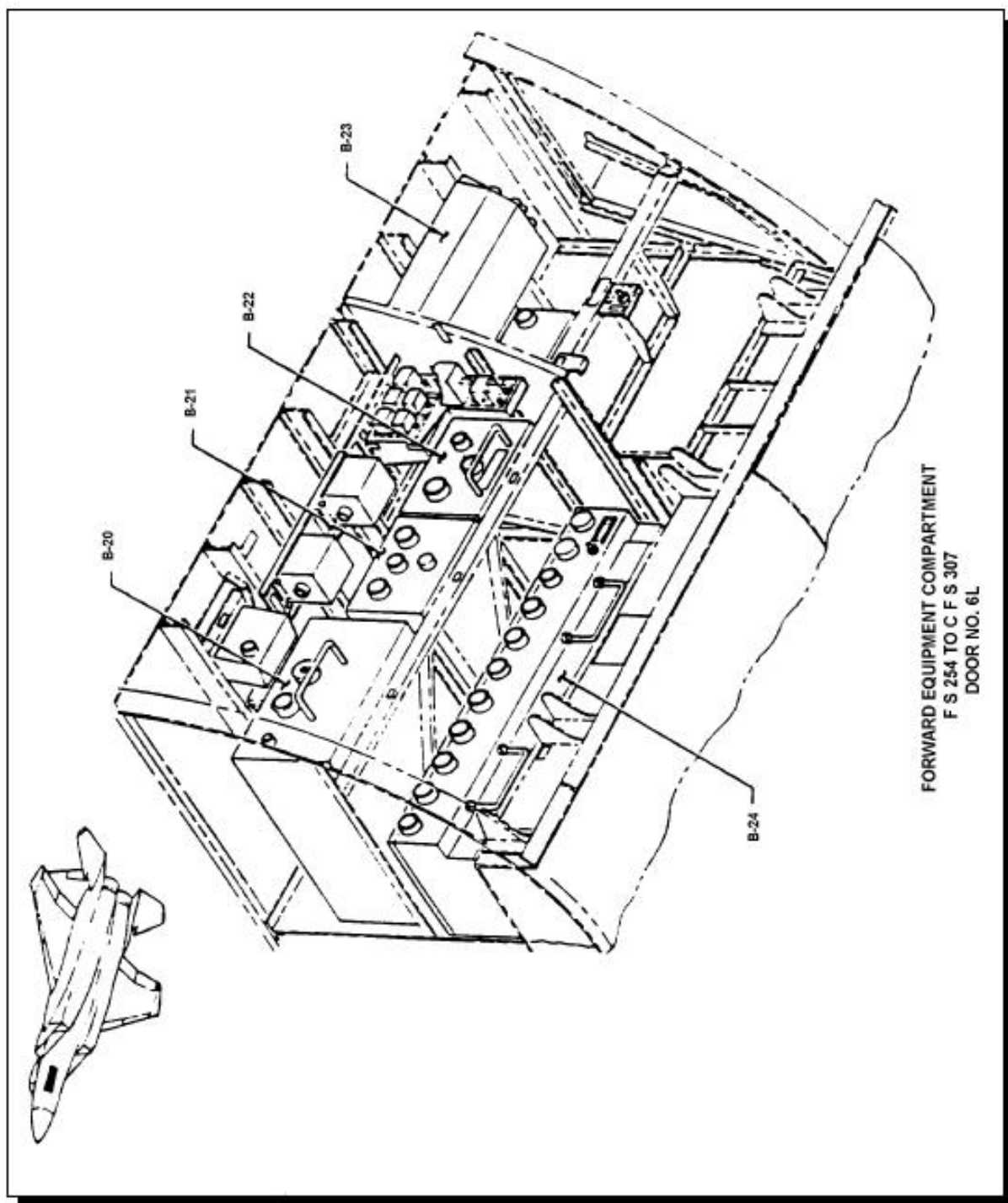


FIGURE 3. Example chapter 2, sample Basic Weight Checklists -  
sample basic weight checklists manual.

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[illegible]

**FIGURE 3. Example chapter 2, sample Basic Weight Checklists - sample basic weight checklists manual. - Continued.**

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## CHAPTER 1 INTRODUCTION

### 1.1 PURPOSE AND SCOPE

This technical manual contains Loading Data (Chart E) which are applicable to Model F-15A aircraft. These charts are intended to assist using personnel in complying with the requirements of TO 1-1B-50 by providing data for insertion into the DD365 series forms for \*(representative/ individual) aircraft. This information is of a specific nature and, except where specifically stated herein, does not relieve any of the general requirements for USAF aircraft weight and balance found in TO 1-1B-50. \*(Contractor, insert the correct term as applicable per TO 1-1B-50, Section IV.)

### 1.2 WEIGHT AND BALANCE CLASSIFICATION

In accordance with the criteria presented in TO 1-1B-50, the weight and balance classification of clearance will be as required by TO 1-1B-50 for Class \*\_\_\_ aircraft.

#### \*NOTE

The contractor shall fill in the aircraft model and the weight and balance classification in accordance with that specified in Section IV of TO 1-1B-50. TO 1-1B-50 is the controlling document for USAF aircraft weight and balance classification. Recommendations for changing aircraft weight and balance classification will be made on AF Form 847 in accordance with AFI 11-215.

### 1.3 HOW TO USE CHART E

Chart E provides data necessary to comply with DD Form 365-4 (Form F) Weight and Balance Clearance requirements. Weight and simplified moments are obtained from Chart E for all the variable load items and are added, in the appropriate reference on Form F, to the aircraft's current basic weight and simplified moment from Chart C (DD Form 365-3). This total represents the gross weight and simplified moment of the loaded aircraft. In-flight center of gravity effects, such as fuel and bomb expenditures, are checked by subtracting the weights and simplified moments of such items from the takeoff condition. The resultant new weight and simplified moment are checked to ensure that the center of gravity remains within limits during the entire flight. Detailed instructions for preparing the DD Form 365-4 are contained in TO 1-1B 50

### 1.4 RECORD OF APPLICABLE TIME COMPLIANCE TECHNICAL ORDERS (TCTOS)

The record of applicable time compliance technical orders is a list of all TCTOs which affect the technical content (text or illustrations) of this manual. The Change/Revision/Supplement Data column lists the date of issue when each change was (or will be) incorporated into this manual. Only current TCTOs are listed. A TCTO is deleted from the list when either the applicable equipment configuration is no longer covered in the publication, or it is rescinded, superseded, or replaced.

### 1.5 YOUR RESPONSIBILITY TO LET US KNOW

Every effort is made to keep the manual current; however, we cannot correct an error unless we know of its existence. In this regard it is essential that you do your part. Comments, corrections, and questions regarding this manual, or any phase of the basic weight and loading data are welcome. These should be forwarded on AF Form 847 as directed by AFI 11-215 through your command Headquarters.

**FIGURE 4. Example chapter 1, introduction - Loading Data.**



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**CHAPTER 2 LOADING DATA**

**2.1 WEIGHT AND BALANCE REQUIREMENTS.**

**2.1.1 General.** This chapter provides specific requirements for weight and balance control of Model T-37B aircraft in accordance with the general requirements found in TO 1-1B-50. This information is of a specific nature and, except where specifically stated herein, does not relieve any of the general requirements of TO 1-1B-50.

**2.1.1.1 Maintaining Manuals.** Weight and Balance personnel (per TO 1-1B-50) will maintain a current Weight and Balance Handbook for each representative aircraft.

**NOTE**

A representative aircraft is one which serves to represent all aircraft that are within  $\pm$  \_\_\_\_\_ percent MAC center of gravity and  $\pm$  \_\_\_\_\_ pounds of the representative aircraft basic weight center of gravity location and basic weight. To satisfy these criteria, more than one representative aircraft may be required for proper weight and balance monitoring of all assigned aircraft. \*(Shall be determined by acquiring activity, see 6.2h.)

**2.1.1.2 Specific Requirements.** Specific weight and balance requirements will be listed here as subparagraphs.

**2.1.2 Weighing Requirements.** In addition to the general weighing requirements specified in Section IV of TO 1-1B-50, T-37B model aircraft will be inventoried and weighed at least once every 48 months. This time interval weighing is required to ensure that the cumulative effects, of minor modifications and repairs, on the aircraft basic weight and center of gravity location, are accurately known. Aircraft time interval weighing should be scheduled in conjunction with the scheduled phase inspection which will precede the 48-month time interval limit.

**2.1.3 Weighing Record.** After completion of the Aircraft Weighing Record (DD Form 365-2), forward one copy to:

List the address of the Logistics Center which is assigned the maintenance engineering management responsibility for the aircraft (see 6.2i).

**2.1.4 Chart E, T-37B 59-256 and up.** Figure 2-1 contains the Chart E Loading Data, applicable to model T-37B aircraft Serial Numbers 59-256 and up, which are necessary for computing aircraft weight and balance, and for completion of DD Form 365-4 Weight and Balance Clearance Form F, when required.

**FIGURE 5. Example chapter 2 lead-in, Loading Data manual (class 1 aircraft).**

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<u><b>CHAPTER 2 LOADING DATA</b></u>
<p><b>2.1 <u>WEIGHT AND BALANCE REQUIREMENTS</u></b></p> <p><b>2.1.1 <u>General.</u></b> This chapter provides specific requirements for weight and balance control of Model F/TF-15A aircraft in accordance with the general requirements found in TO 1-1B-50. This information is of a specific nature and, except where specifically stated herein, does not relieve any of the general requirements of TO 1-1B-50.</p> <p><b>2.1.1.1 <u>Maintaining Manuals.</u></b> Weight and balance personnel (per TO 1-1B-50) will maintain a current Weight and Balance Handbook for each aircraft.</p> <p><b>2.1.1.2 <u>Center of Gravity.</u></b> It is possible to exceed the center of gravity limits of the aircraft with certain store configurations. Therefore, weight and balance clearance (DD Form 365-4), in accordance with Section IV of TO 1-1B-50, will be accomplished prior to each flight.</p> <p><b>2.1.1.3 <u>Specific Requirements.</u></b> Specific weight and balance requirements will be listed here as subparagraph.</p> <p><b>2.1.2 <u>Weighing Requirements.</u></b> In addition to the general weighing requirements specified in Section IV of TO 1-1B-50, F/TF-15A model aircraft will be inventoried and weighed at least once every 36 months. This time interval weighing is required to ensure that the cumulative effects, of minor modifications and repairs, on the aircraft basic weight and center of gravity location, are accurately known. Aircraft time interval weighing should be scheduled in conjunction with the scheduled phase inspection which will precede the 36-month time interval limit.</p> <p><b>2.1.2.1 <u>Specific Weighing Requirements.</u></b> When required by the acquiring activity, specific weighing requirements such as after engine change, etcetera, will be specified here as subparagraphs (see 6.2j).</p> <p><b>2.1.3 <u>Weighing Record.</u></b> After completion of the Aircraft Weighing Record (DD Form 365-2), forward one copy to:</p> <p style="padding-left: 40px;">List the address of the Air Logistics Center which is assigned the maintenance engineering management responsibility for the aircraft (see 6.2i).</p> <p><b>2.1.4 <u>Chart E, F/TF-15A 72-113 and up.</u></b> Figure 2-1 contains the Chart E Loading Data, applicable to model F/TF-15A aircraft Serial Numbers 72-113 and up, which are necessary for computing aircraft weight and balance, and for completion of DD Form 365-4 Weight and Balance Clearance Form F, when required.</p>

**FIGURE 6. Example chapter 2 lead-in, loading data manual (class 2 aircraft).**



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Weight and Balance Requirements  
 Weighing Requirements  
 Weighing Record  
 General Weighing Instructions  
     Aircraft Conditions  
     Fuel Drains  
     Engine Oil  
     Procedures  
     Leveling  
     Measuring  
 Aircraft Diagram  
     \* Jack Points  
         Dimensions Pertaining to Aircraft Weight and Balance  
         Fuel Tank Arrangement  
 Notes Affecting Aircraft Loading  
     Engine Oil Table  
     Crew Tables  
     Ammunition Tables  
     Stores Tables and Diagrams  
     Fuel Tables  
     Water Injection Fluid Tables  
     Miscellaneous Data Tables  
     Center of Gravity Limits  
     Instructions for Loading  
         Sample Form F  
         Forward CG Calculations  
         Aft CG Calculations  
     Typical Service Load Conditions  
     Takeoff and Landing Gross Weight Restrictions  
     Center of Gravity and Percent MAC Calculations  
     Moment/Weight CG Conversion Table  
     Gross Weight vs. CG Position Plots

- \* Identify if nose or tail jack points were used, and which points were used to calculate weight and CG position.

**FIGURE 7. Example order for Chart E data Loading Data manual.**

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**APPENDIX A**

**SAMPLE BASIC WEIGHT CHECKLISTS  
MARKUP LANGUAGE TOOLS**

## A.1 SCOPE.

A.1.1 Scope. This appendix describes the standard Air Force (AF) markup language digital tools created for developing and delivering AF Technical Manuals (TMs). These tools are available in the Digital Support Suites (DSS) provided by the AF Technical Manual Specifications and Standards (TMSS) activity (see A.2). This appendix is a mandatory part of this detail specification. The information herein is intended for compliance.

A.1.2 Template Tool. The Document Type Definition (DTD) is the primary tool that is used as a template for authoring AF TMs and is based on rules outlined in MIL-PRF-28001 and ISO 8879. See A.2.1 for information about the DTD specified for this appendix subset.

## A.2 DSS

The DSS is comprised of the following tools for authoring and rendering the TM. See A.3 for information about obtaining DSS component files in digital format through the TMSS activity web site. For information about the current status and availability of DSS tools, see A.3.4.

A.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification. To be delivered digitally, the TM shall be tagged using the applicable DTD provided through the TMSS activity. Information concerning the markup language type and use of DTDs currently provided, i.e., Standardized General Markup Language (SGML), may be obtained through the contacts listed under A.3.

A.2.2 Formatted Output Specification Instance (FOSI). The FOSI provides formatting for each element of an SGML tagged instance for rendering as a page-oriented document. It contains formatting information that conforms to the content specific requirements of this specification.

A.2.3 Tag Description Table (TDT). The TDT provides detailed descriptions of the elements contained in the DTD. The TDT contains the element tagging structure, parent elements, full element name, source paragraph, attribute descriptions unique to the element, and entities.

A.2.4 OmniMark™. DSSs contain OmniMark™ scripts designed to be used as a text processing language that enables authors to auto-generate redundant material that may be difficult to tag manually.

NOTE: FOSIs and OmniMark™ scripts are no longer supported and may not be available for some DSSs.

## A.3 OBTAINING DSS TOOLS.

A.3.1 Obtaining files by users with mil web site access. The following applies to those interested in obtaining DSS component files who are on a mil internet domain, having mil web address access.

A.3.1.1 AF TMSS web site. DTDs, TDTs, and other files in the DSS can be accessed at the TMSS web site at <https://techdata.wpafb.af.mil/tmss/index.html>. On the web page, the “Baseline” menu option in the left pane contains three bulleted options called “Specifications”, “Standards”, and “Handbooks”. Hover the cursor over “Specifications” and a listing of the TMSS specifications will appear. Hover over the desired specification number and another drop down list will appear that contains an entry indicating the PDF version of the specification and other entries for the associated appendices. To obtain the preferred subset DTD, select the desired appendix from the list. The following items will appear on the downloading page: The name of the specification, the appendix number and name, the current version of the DSS, buttons to download specific DSS files provided and a “Download” button to download the entire DSS zip file.

A.3.2 Obtaining files by users with a Public Key Infrastructure (PKI) certificate or a Common Access Card (CAC). The following applies to those interested in obtaining DSS component files who have a PKI certificate or a CAC:

A.3.2.1 AF TMSS SharePoint web site. DTDs, TDTs, and other files in the DSS can be accessed at the AF TMSS SharePoint web site: <https://cs3.eis.af.mil/sites/OO-LG-MC-38/default.aspx>.

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**APPENDIX A**

A.3.3 Obtaining files by users without mil access, PKI certificate, or CAC. Those seeking to obtain DSS files who do not have .mil web access, a PKI certificate, or a CAC should contact their AF Program Management Office (PMO) or see A.3.4 to obtain information.

A.3.4 TMSS Helpdesk assistance. Address any requests relating to the DSS by E-mail to [SGMLSUPPORT@us.af.mil](mailto:SGMLSUPPORT@us.af.mil) (organizational address: Wright-Patterson AFLCMC/HIAM\_AF TMSS HLPDSK) or by postal mail to Air Force Technical Manual Specifications and Standards, AFMC/AFLCMC/HIAM, 4170 Hebble Creek Road, Building 280, Door 15, Wright-Patterson AFB OH 45433-5653.

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**APPENDIX B**

**LOADING DATA MANUAL DOCUMENT TYPE MARK UP  
LANGUAGE TOOLS DEFINITION SUBSET**

**B.1 SCOPE**

See [A.1](#)

**B.2 DSS.**

See [A.2](#)

B.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see [3.4.1](#))

**B.3 OBTAINING FILES.**

See [A.3](#)

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**CONCLUDING MATERIAL**

Custodians:  
Air Force - 16

Preparing activity:  
Air Force - 16  
(Project TMSS-2014-028)

Review activities:  
Air Force - 01, 10, 99

**NOTE**

The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.