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The Aviation Point.

Locating Damage: Station, Buttock Line, Water Line, Zone and Chapter

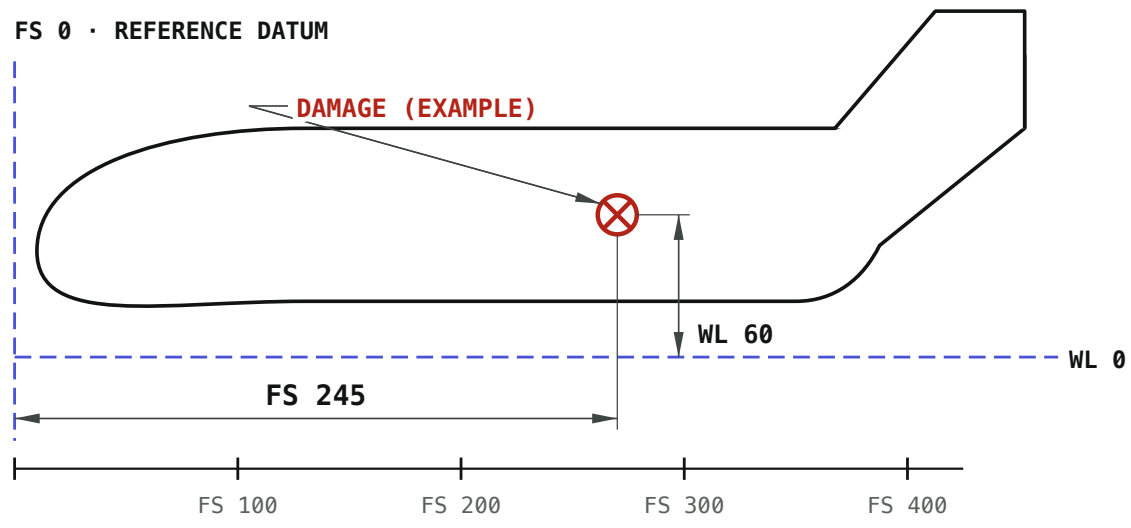
FS · BL · WL · zones and panels · ATA chapters 51 to 57

1 Identification

REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS

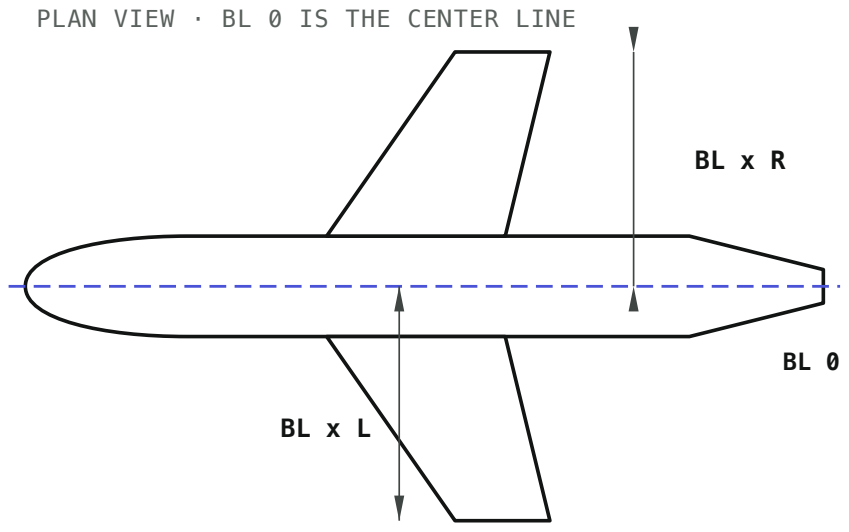
A · FUSELAGE STATION AND WATER LINE

SIDE VIEW · DATUM NEAR THE NOSE



B · BUTTOCK LINE

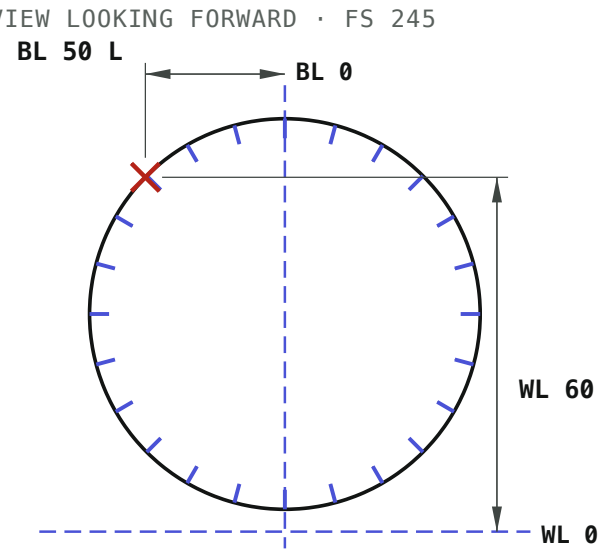
PLAN VIEW · BL 0 IS THE CENTER LINE



LEFT = LEFT OF A PILOT LOOKING FORWARD
PLAN DRAWN NOSE TO THE LEFT

C · FRAME SECTION AT THE DAMAGE

VIEW LOOKING FORWARD · FS 245



Frame and stringer: as numbered in the SRM.

D · CHAPTER OF THE PART

ATA CHAPTERS 51 TO 57 · JASC TITLES

ATA	CHAPTER TITLE	EXAMPLE 4-DIGIT CODE
51	Standard practices/structures	5101 Aircraft structures
52	Doors	5210 Passenger/crew doors
53	Fuselage	5313 Longeron/stringer
54	Nacelles/pylons	5411 Frame/spar/rib
55	Stabilizers	5522 Elevator plate/skin
56	Windows	5610 Flt compt windows
57	Wings	5711 Wing spar

Values drawn for the format. The aircraft's datum governs.

NOTES

1. Dimensions in inches. Do not scale: the SRM sets the values.
2. For reference. The applicable manual always governs.
3. Based on H-8083-31B pp. 1-37 to 1-39 · JASC table.

REVISIONS

REV	DESCRIPTION	YEAR
A	First issue	2026

The Aviation Point.	Structural repair reference		
TITLE: Locating damage			
DRAWING NO.: TAP-DWG-138	REV: A · 2026	SCALE: NTS	SHEET: 1 OF 1
APPLIES TO: Any airframe			
DO NOT SCALE DRAWING			

After FAA-H-8083-31B pp. 1-37 to 1-39 and the FAA JASC Code Table (Oct 2008). Generic aircraft with drawn values: the manual of the aircraft governs.

The location systems

Mark	Name	Measured
FS	Fuselage station (some makers: body station, BS)	In inches from the reference datum, a vertical plane at or near the nose. Fore and aft, parallel to the center line from the nose through the tail cone
BL	Buttock line	From the vertical plane down the center of the aircraft, to the left or to the right
WL	Water line	Height in inches, perpendicular to a horizontal plane usually at the ground, the cabin floor or another easy reference
AS	Aileron station	Outboard from, and parallel to, the inboard edge of the aileron, perpendicular to the rear beam of the wing
KS	Flap station	Outboard from, and parallel to, the inboard edge of the flap, perpendicular to the rear beam
NC / Nac. Sta.	Nacelle station	Forward of or behind the front spar of the wing, perpendicular to a designated water line
HSS · VSS · PPS	Horizontal stabilizer, vertical stabilizer and powerplant stations	Used on large aircraft. The manufacturer's terminology and the station system apply in every case

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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ATA chapters 51 to 57 and the JASC codes under them

ATA	Chapter	JASC codes (four digits)
51	Standard practices / structures	5100 standard practices and general procedures for typical repairs common to several chapters; 5101 aircraft structures, general reports touching two or more areas
52	Doors	5210 passenger/crew · 5220 emergency exits · 5230 cargo/baggage · 5240 service doors (5241 to 5248) · 5250 fixed inner doors · 5260 entrance stairs · 5280 landing gear doors
53	Fuselage	5311 frame · 5312 bulkhead · 5313 longeron/stringer · 5314 keel · 5315 floor beam · 5321 floor panel · 5330 plate/skin (with access covers) · 5340 attach fittings (5341 wing, 5342 stabilizer, 5343 landing gear, 5344 door hinge) · 5350 aerodynamic fairings
54	Nacelles / pylons	5411 frame/spar/rib · 5412 bulkhead/firewall · 5413 longeron/stringer · 5414 plate/skin · 5415 attach fittings · 5420 miscellaneous structure
55	Stabilizers	5511 stabilizer spar/rib · 5512 stabilizer plate/skin · 5521 and 5522 elevator spar/rib and plate/skin · 5531 and 5532 vertical stabilizer · 5533 ventral · 5541 and 5542 rudder · 5550 attach fittings
56	Windows	5610 flight compartment · 5620 passenger compartment · 5630 door windows · 5640 inspection windows
57	Wings	5711 spar · 5712 rib/bulkhead · 5713 longeron/stringer · 5714 center box · 5720 miscellaneous (tips, clips, brackets, doublers) · 5730 plate/skin · 5740 attach fittings · 5751 aileron (hinges and balance weights) · 5752 aileron tab · 5753 trailing edge flap · 5754 leading edge devices · 5755 spoilers

2 Allowable damage

Where the damage is decides which limit applies.

3 Repair

1. Read the datum in the manual.
2. Take FS, BL and WL of the damage.
3. Name the member and the bay.
4. Give the chapter and JASC code.
5. Point to the SRM data.
6. Sign the entry.

Key points

- **The datum is the manufacturer's**: at or near the nose for FS, the center line for BL. Read it in the aircraft's manual.
- **Write the system with the number**: FS 245, BL 50 L, WL 60.
- **Zones and panels** are numbered by the manufacturer; the panel number often carries zone, subzone and side.
- **Chapter** 51 to 57 and the JASC code name the part. 5100 holds the practices common to several chapters.
- **Record** the coordinates, the member, the chapter and the data reference (14 CFR 43.9(a)).

MAIN SOURCES · FAA-H-8083-31B, Aviation Maintenance Technician Handbook: Airframe, Chapter 1 · FAA Joint Aircraft System/Component Code Table and Definitions, October 2008 · TO 1-1A-1 / NAVAIR 01-1A-1, Engineering Handbook Series for Aircraft Repair: General Manual for Structural Repair · 14 CFR 43.9

SCAN · OPEN THIS GUIDE
theaviationpoint.com/sheet-metal/locating-damage/

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.