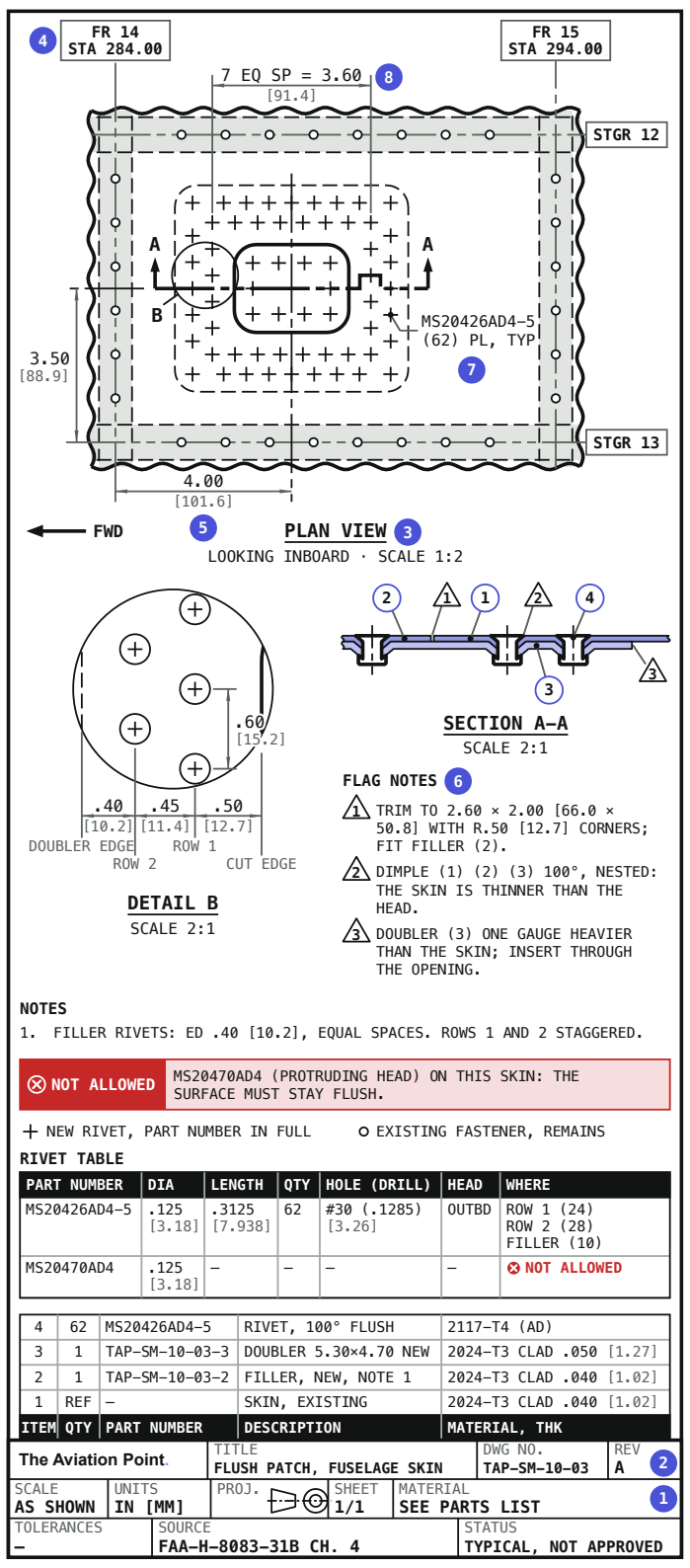
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Reading Aircraft Drawings: From the Title Block to the Rivet Table

Title block · revision · views · lines · tolerances · notes · fasteners

1 Identification



TAP training drawing TAP-SM-10-03, the one the worked example reads.

Title block and revision block

Field	What it tells you
Drawing number	Identifies the print; in the number block at the lower right of the title block. On a drawing of several sheets: the sheet number and the total
Dash number	Variants of one part on one drawing. “470204-1LH shown; 470204-2RH opposite”: the left part is drawn, the right one is its mirror image. Some systems use odd dashes for left, even for right
Reference numbers	Other drawings that belong with this one
Title and signatures	Name of the part or assembly, the scale, the date, the company, and who drew, checked and approved it
General tolerances	Apply to every dimension that carries no tolerance of its own
Projection symbol	Third angle or first angle: where each view sits (see Views)
Material and finish	Specification, temper and thickness, in the parts list on an assembly; finish marks give the surface condition
Revision block	Ruled columns near the title block: revision symbol, date and description of each change

Lines and what they mean

Line	Drawn as	Means
Visible	Thick, continuous	Edges you can see
Hidden	Thin, short dashes	Edges behind a surface
Center	Thin, long and short dashes	Axes, hole centers, symmetry
Phantom	Thin, a long dash and two short ones	Adjacent parts, alternate positions; on TAP drawings also station lines
Dimension and extension	Thin, continuous; arrows on the dimension line	Where a size runs from and to
Leader	Thin, continuous; an arrow on an edge, a dot inside a surface	Ties a note or callout to its feature
Cutting plane	Thick, a long dash and two short ones, arrows at the ends	Where a section is cut and which way you look
Break	Short: thick freehand. Long: thin with zig-zags	Part of a long piece left out
Section lining	Thin lines, usually at 45°	The cut face in a section; the pattern can show the material
Stitch	Very short dashes or dots	Stitching or sewing lines

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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Dimensions and tolerances, in [mm]

Written	Read it as
.250	Decimal inch on a drawing: no zero before the point; the decimals show the precision
.250 ±.005	The dimension has the same number of decimals as its tolerance
0.8 (mm drawing)	Millimeters: zero before the point below 1 mm; whole millimeters without a point
[6.35]	Millimeters in brackets under the inch value: reference only
0.225 +0.0025 -0.0005	Largest 0.2275, smallest 0.2245: tolerance 0.0030 in (0.076 mm)
0.225 ±0.0025	0.2225 to 0.2275: tolerance 0.0050 in (0.127 mm)
4X ⌀.1895-.1905 [4.814-4.838]	Four holes; limit dimensioning, low limit first on one line (or high limit over low). Here NAS618 column A for a -6 Hi-Lok pin
⌀ R ⌄ ⌴ ↧ (.500) framed value	Diameter, radius, countersink, counterbore or spotface, depth, reference dimension, basic dimension
0.040 in (1.02 mm)	Running text and tables keep the zero before the point, so a faded point cannot turn .25 into 25

2 Allowable damage

When a drawing cannot be used: wrong number or dash, superseded revision, not approved for the aircraft, or illegible.

3 Repair

1. Title block, units and projection.
2. Latest revision against the task.
3. View direction and FWD arrow.
4. Stations, stringers, frames.
5. Dimensions, tolerances, notes.
6. Rivet table and parts list against the SRM.

Key points

- **Title block and revision first.** Number, dash, sheet, units, projection.
- **Never scale the print:** the written dimension is the size.
- **Flag notes** apply only where the flag is.
- **TAP drawings are typical**, not approved data: the SRM governs.

MAIN SOURCES · FAA-H-8083-30B, Aviation Maintenance Technician Handbook: General · FAA-H-8083-31B, Aviation Maintenance Technician Handbook: Airframe · ASME Y14.5-2009, Dimensioning and Tolerancing · ASME Y14.2, Line Conventions and Lettering · ASME Y14.3, Orthographic and Pictorial Views · ISO 5456-2, Technical drawings: Projection methods, Part 2: Orthographic representations · ASME Y14.100, Engineering Drawing Practices · NAS523 · NAS618 · ATA iSpec 2200 · 14 CFR 43.9 and 43.13 · Regulation No 748/2012, Annex I, Subpart M · Regulation No 1321/2014, Annex III, Appendix I, as amended by Regulation 2023/989 · FAA-S-ACS-1, Aviation Mechanic General, Airframe, and Powerplant Airman Certification Standards

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