

Todo list

1. [ADM]: Check definition of sideview outlines and their control points.	1
2. [DG]: Add definition of topview outlines and their control points.	1

1 Fuselage definitions

The fuselage in ADOpT is conceptually divided three in subparts:

- the *nose* (front part, subscript ‘N’),
- the *cylindrical body* (central part with constant cross section, subscript ‘C’), and
- the *tail cone* (rear part, subscript ‘T’).

The shape of the fuselage is defined on the basis of a number of *outline curves*. Outlines are associated to the different views of the body.

The sideview outline (leftview or also *XZ*-outline) is shown in Figure 1 as the union of two curves — *upper* and *lower* outlines — in the *XZ* plane, giving the silhouette of the body as seen from the negative *Y*-axis. A close up view of the nose is shown in Figure 2.

In Figure 1 is also shown the topview outline (also *XY*-outline) as the union of two curves — *right* and *left* outlines — in the *XY* plane representing the silhouette of the body as seen from the positive *Z*-axis.

A generic cross section of the fuselage is shown in Figure 3 as seen from the negative *X*-axis. The two outlines here — *upper* and *lower* outlines — are those defining the upper and lower part of the section shape.

In Table 1 are listed the main variables defining the fuselage shape.

Table 1: Fuselage variables.

Quantity	Description
l_F	fuselage total length
l_N	fuselage nose length
l_C	fuselage cylindrical trunc length
l_T	fuselage tail cone length
$d_C \equiv h_B$	height of fuselage cylindrical trunc, i. e. maximum fuselage height
$h_f(X)$	height of fuselage section at station X
w_B	width of fuselage cylindrical trunk, i. e. maximum fuselage width
$w_f(X)$	width of fuselage section at station X
$h_f(X)$	height of fuselage section at station X
...	to be continued

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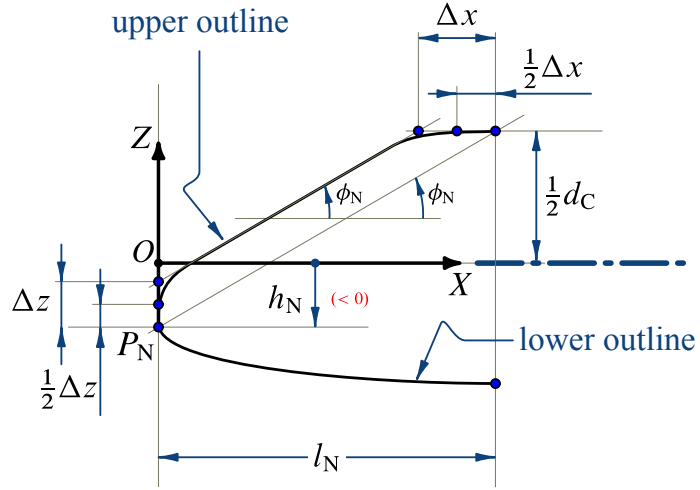


Figure 2: Fuselage sideview. Nose definitions.

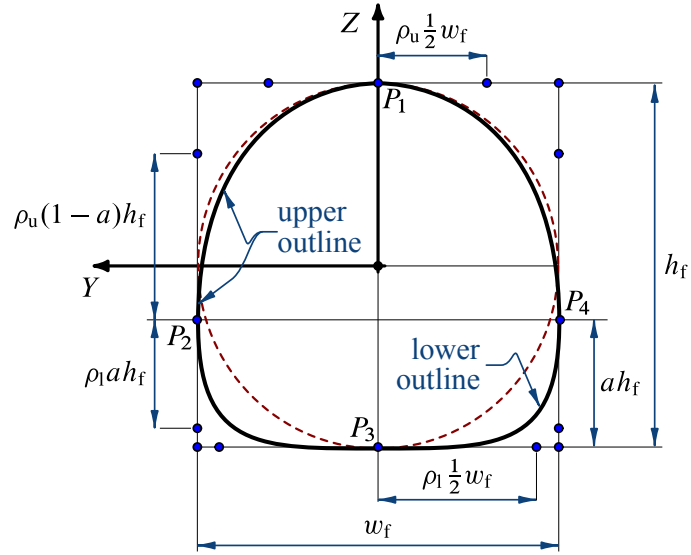


Figure 3: Generic fuselage cross section at station X.

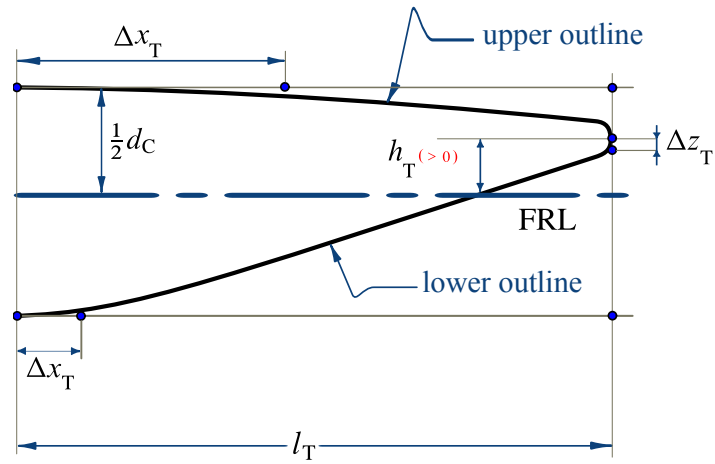


Figure 4: Fuselage sideview. Tail definitions.