

?????????OLS/OFV

04 ??????????OLS / OFV

???? 2026-05-29
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1. ?????

Vertiport ?????????????????????

?? heliport ???OLS???? / ????? / ???
?? eVTOL ???OFV????/???? OFV ??? OLS

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?????? → ?? MH5013 ??? OLS
?????? → ?? h0 ? OFV????/???????????? OFV ??

?? eVTOL ?????????????????????

2. ????????

??	????????	???? OFV	????	????
ICAO Annex 14 Vol II	?? heliport OLS	?	? FATO/????	FATO? Safety Area ???????? ???
ICAO Doc 9261	? Annex 14 ????	???? heliport	???????? ????????	1D? 0.83D? OLS/LOS
MH5013-2023	?? OLS + ????	?	???? / ???????? ? $\geq 135^\circ$???????? ???????? ?

Regulation	Surfaces	OFV	Angles	Parameters
T/CCAATB 0062-2024	MH5013 OFV		$\geq 135^\circ$	D, h0, OFV, FATO
EASA PTS-VPT-DSN	OLS + OFV		$\geq 135^\circ$	h1, h2, TOwidth, FATOwidth, θ_{app} , θ_{dep}
CASA AC139.V-01	FPA/VPS/OFV + approach/climb-out surface			FPA, VPS, OFV, Design D
FAA EB105A	14 CFR Part 77 imaginary surfaces	EASA OFV	reciprocal $\geq 135^\circ$	8:1 approach/departure, 2:1 transitional, 4000 ft

3. ?????????? vs ?????

PDF: [imaginary_surfaces.pdf/md](#)

3.1 ???????

6.1.1, 6.1.2

eVTOL MH5013
 eVTOL D
 FATO
 $\geq 135^\circ$

- heliport OLS
-

3.2 ???????

6.2.1, 6.2.3

MH5013 OLS h0 OFV
 OFV

MH5013

h0 eVTOL

OFV

$h_0 \leq D$

OFV FATO 2D

OFV h0 $2 \times (D + h_0)$

$h_0 > D$

OFV FATO 2D

OFV h0 4D

D 45° D

FATO

/ $\geq 135^\circ$ FATO

OFV

2D

2D 4D

- OFV
- OLS h0 eVTOL
-

4. MH5013-2023??? OLS ??

[MH5013-2023.pdf/md](#)

4.1 OLS ??

6.1 6.2

MH5013

PinS FATO

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T_{0front} = Front distance at h_2
 T_{0back} = Back distance at h_2
 $FATO_{width}$ = Width of FATO
 $FATO_{front}$ = Front distance on FATO
 $FATO_{back}$ = Back distance on FATO
 θ_{app} = Slope of approach surface
 θ_{dep} = Slope of departure surface

□□ / □□□□

$h_2 \geq h_1$
 $T_{0width} \leq 5D$
 $T_{0front} \leq 5D$
 $T_{0back} \leq 5D$
 $FATO_{width} \geq 1.5D$
 $FATO_{front} \geq 0.75D$
 $FATO_{back} \geq 0.75D$
 $\theta_{app} \geq 4.5\%$
 $\theta_{dep} \geq 4.5\%$

5.5 OFV ??

□□□ D.455□

OFV □ Safety Area □□□□□□□□□□ h_1 □
 □ h_1 □ h_2 □□□□□□□□ funnel-shaped volume□
 □ h_2 □□□□□ VTOL procedure volume □□□□ $0.5D$ □
 OFV □□□□□□□□□□

□□□

- EASA □ OFV □□□□□□□□□□ AFM □□□□□
- □□□□□ OFV □□□□□□□□ □□ □ h_0 □□□□□

6. CASA?FPA / VPS / OFV

□□□ [CASA-AC139.V-01-Guidance-Vertiport-Design-2023.pdf](#)

CASA □□□□□□□□□□ EASA □□□□□□□□□□□□□□□□

FPA = FATO Protection Area
VPS = Vertical Procedure Surface
OFV = Obstacle Free Volume
Approach/climb-out surface
Transitional surface

□□□□

OFV □ FPA □ VPS □□□□□□□□□□ vertical procedures □□□□
VPS □□□□□□□□□□□□□□□□□□□□

□□□□

FPA reference circle $r = \frac{1}{2} \text{FATO width} + 3 \text{ m} \times 0.25 \text{ Design D}$ □□□□□
VPS reference circle $r = \text{FATO}$ □□□□□
VPS reference circle $r = \text{FPA reference circle } r + 100 \text{ ft} \times 1 \text{ Design D}$
OFV □□ FPA □ VPS □□□□□□□
OFV □□□□□

□□□

- CASA □ FPA/VPS/OFV □□□□□□□□
- □□ EASA □ OFV □□□□□□□□□□ /□□□□□□□□

7. FAA EB105A?? OFV?? Part 77 imaginary surfaces

□□□ [FAA-EB-105A-Vertiport-Design-2024.pdf](#)

7.1 ?????

FAA EB105A □□□□

14 CFR Part 77 □□□□ heliport □ imaginary surfaces □□□□ vertiport□
□□ primary surface, approach surface, transitional surfaces□

□□□ EASA/CASA □□□□□

FAA □□□□ EASA □ OFV□□□□□ vertiport □□ Part 77 □□□□□□□□

Vertiport
OFV OLS

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