



Federal Aviation
Administration

Declared Distances

Update to Airport Design – AC 150/5300-13A

Industry Day

Presented To: Aviation Industry Representatives

By: Terry R. Washington, P.E.

Regional Program Manager (ASO-610)

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Federal Aviation
Administration



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DECLARED DISTANCES

New approach to explaining & Illustrating Declared Distances



**Federal Aviation
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Declared Distances

Four Distances:

- Landing Distance Available (LDA)
- Accelerated Stop Distance Available (ASDA)
- Takeoff Run Available (TORA)
- Takeoff Distance Available (TODA)



Declared Distances- The new approach discusses and illustrates how to:

- Establish the **approach end** of the **LDA** (threshold location)
- Establish the **stop end** of the **LDA**
- Establish the **start of takeoff** for the **ASDA**, **TORA** and **TODA**
- Establish the **stop end** of the **ASDA**
- Establish the **departure end** of the **TODA** and the **DER**.
- Establish the **departure end** of the **TORA**
- And, finally how to calculate each distance



Declared Distances- The new approach is intended to:

Reduce confusion by only putting on a drawing that explains a distance those things that have a relationship to that distance. For example:

- A drawing illustrating TODA will only show the runway, TODA, the 40:1 instrument departure surface, the DER, a clearway if one exist, and the TORA if it is necessary, etc.
- A drawing illustrating ASDA will only show the runway, the RSA, OFA, and a stopway if one exist, etc.
- A drawing illustrating the LDA will only show the runway, approach RPZ, RSA, OFA, threshold siting surface, etc.
- A drawing relating to TORA will only show the runway, Departure RPZ, TODA if necessary, etc.



Declared Distances- Policy changes:

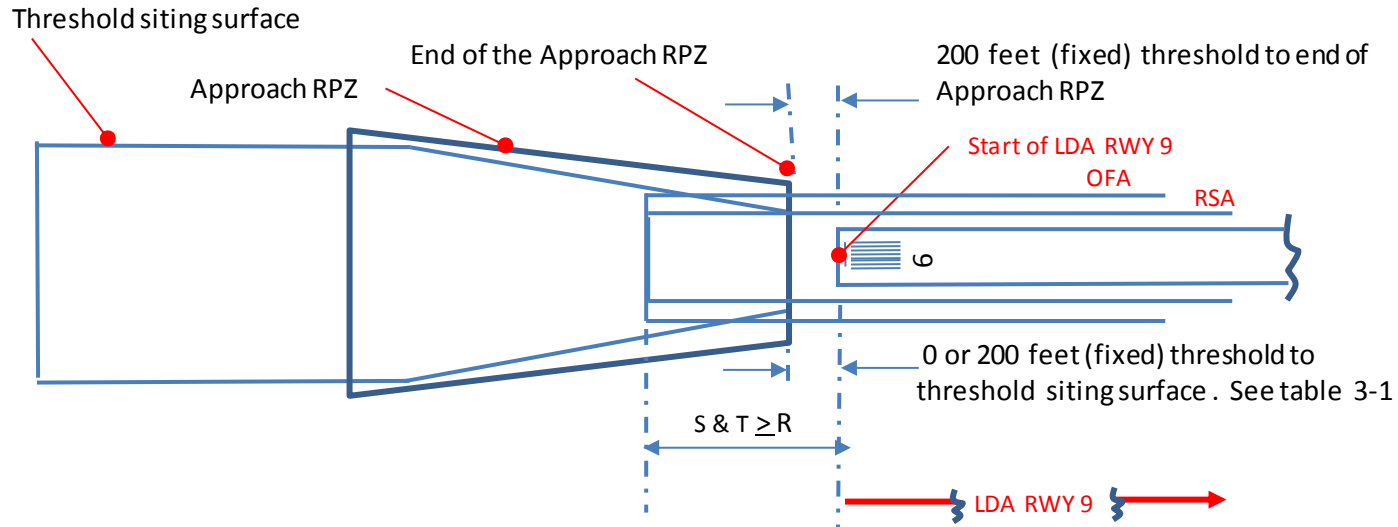
No policy changes with respect to the use of declared distances are planned.



Declared Distances

ESTABLISHING THE START END OF THE LDA (THRESHOLD LOCATION)

Landing Direction →



S = Actual or proposed length of RSA beyond runway end R = **Standard** length of RSA/ROFA prior to threshold
 T = Actual or proposed length of OFA beyond the runway end

Fig. 3-9(a). Example of threshold at beginning of runway where standards are met
 (No displaced threshold)



Declared Distances

ESTABLISHING THE START END OF THE LDA (THRESHOLD LOCATION) CONT.

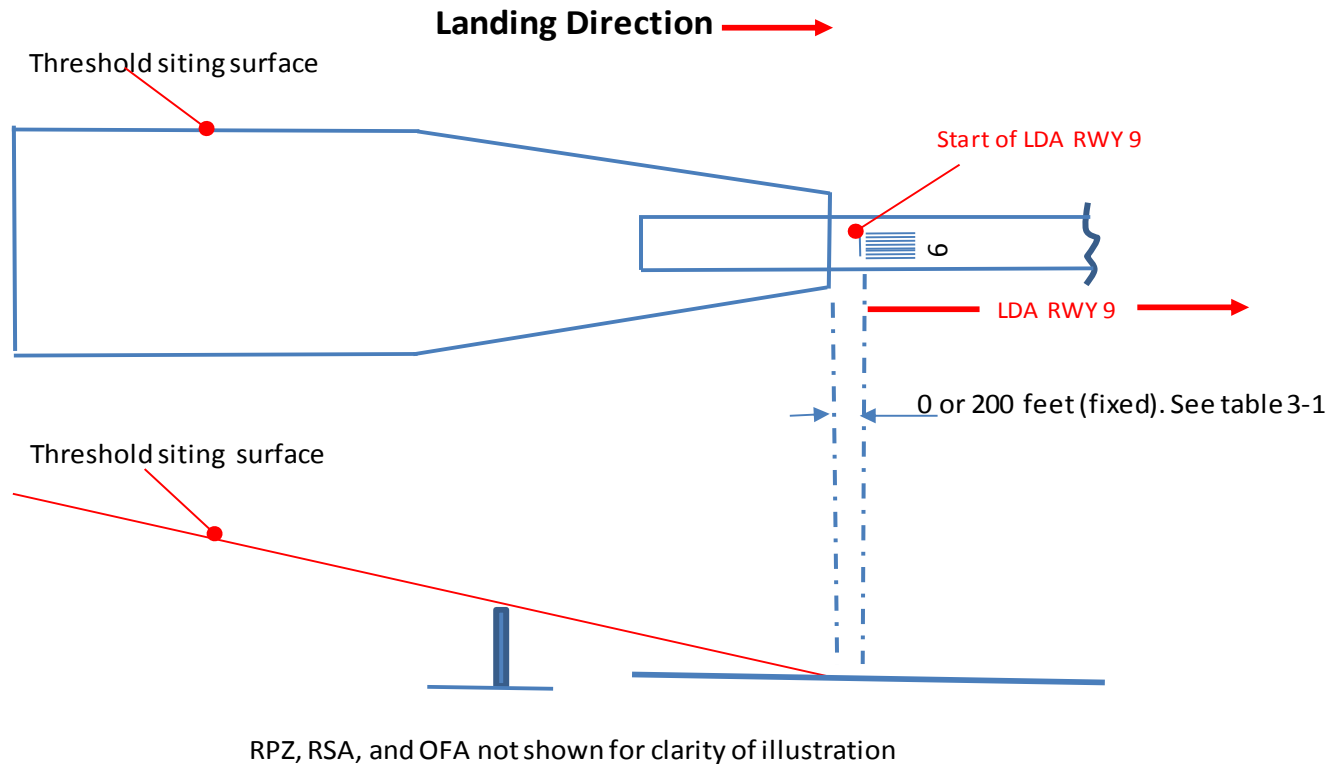
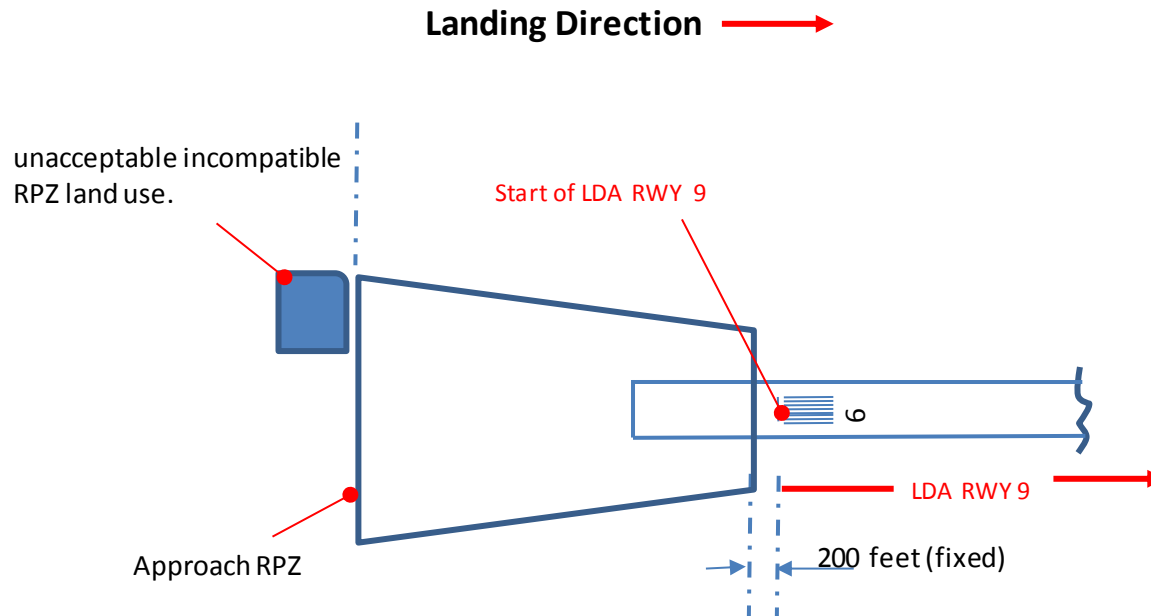


Fig. 3-9 (b). Example of threshold displaced to mitigate penetration(s) to the threshold siting criteria



Declared Distances

ESTABLISHING THE START END OF THE LDA (THRESHOLD LOCATION) CONT.



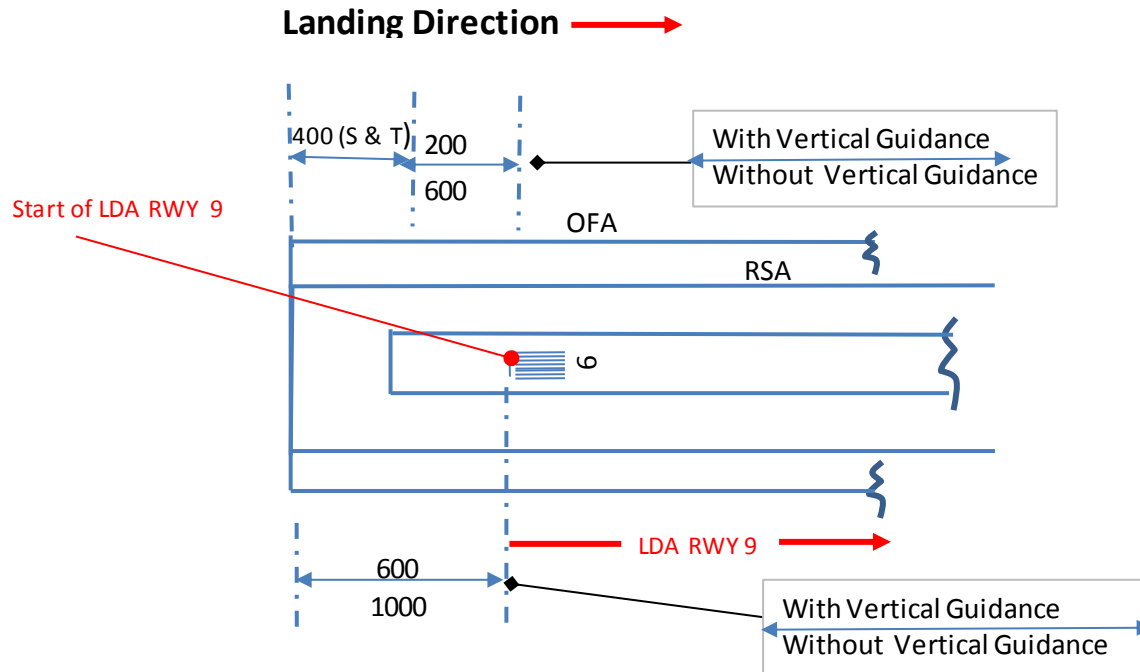
Threshold siting surface, ROFA, and RSA not shown for clarity of illustration

Fig. 3-9 (c). Example of threshold displaced to get incompatible land uses out of the Approach RPZ.



Declared Distances

ESTABLISHING THE START END OF THE LDA (THRESHOLD LOCATION) CONT.



RPZ, and threshold siting surface not shown for clarity of illustration

S = Actual or proposed length of RSA beyond the runway end T = Actual or proposed length of ROFA beyond the runway end

R = **Standard** length of RSA/ROFA prior to threshold (600 ft. w vertical guidance, 1000 ft. without in this example)

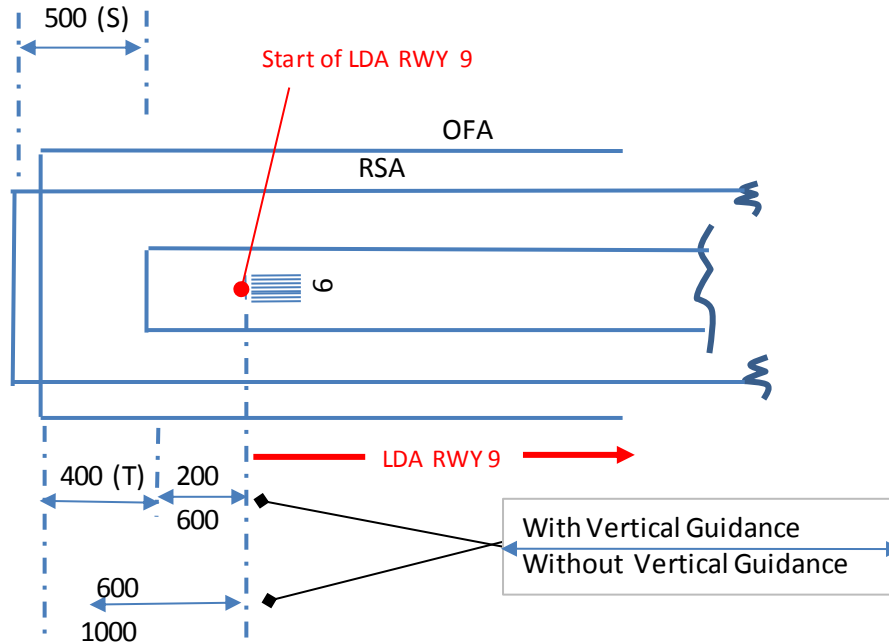
Fig. 3-9(d). Example of threshold displaced to resolve nonstandard RSA



Declared Distances

ESTABLISHING THE START END OF THE LDA (THRESHOLD LOCATION) CONT.

Landing Direction →



RPZ, and threshold siting surface not shown for clarity of illustration

S = Actual or proposed length of RSA beyond runway end T= Actual or proposed length of ROFA beyond the runway enc

R = **Standard** length of RSA/ROFA prior to threshold (600 ft. w vertical guidance, 1000 ft. without in this example)

Fig. 3-9 (e) . Example of threshold displaced to resolve nonstandard OFA



Declared Distances

ESTABLISHING THE START OF - ASDA, TODA and TORA

Operational Direction →

Start of ASDA, TODA, & TORA

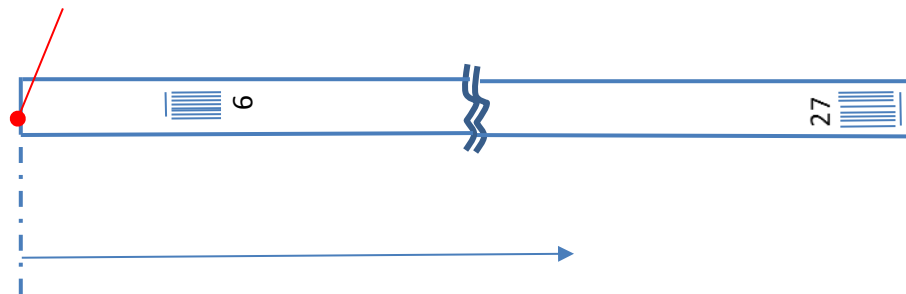


Fig. 3-10 (a) Example of ASDA, TORA and TODA starting at beginning of runway. (Most Common)



Declared Distances

ESTABLISHING THE START OF - ASDA, TODA and TORA Cont.

Operational Direction →

Start of ASDA, TODA & TORA

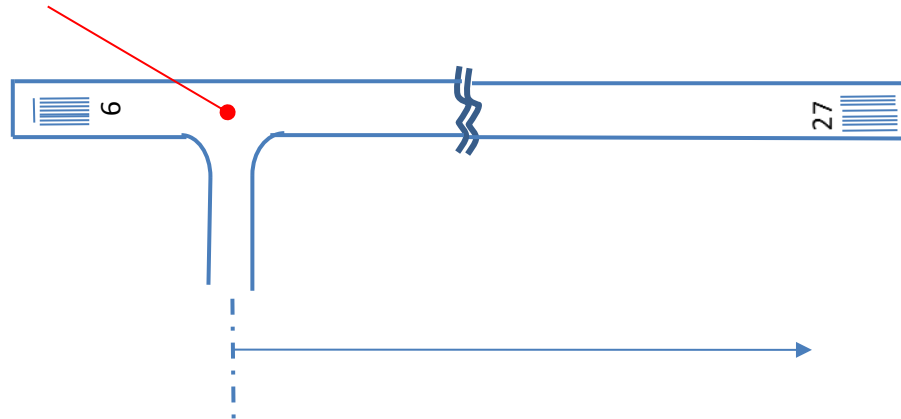
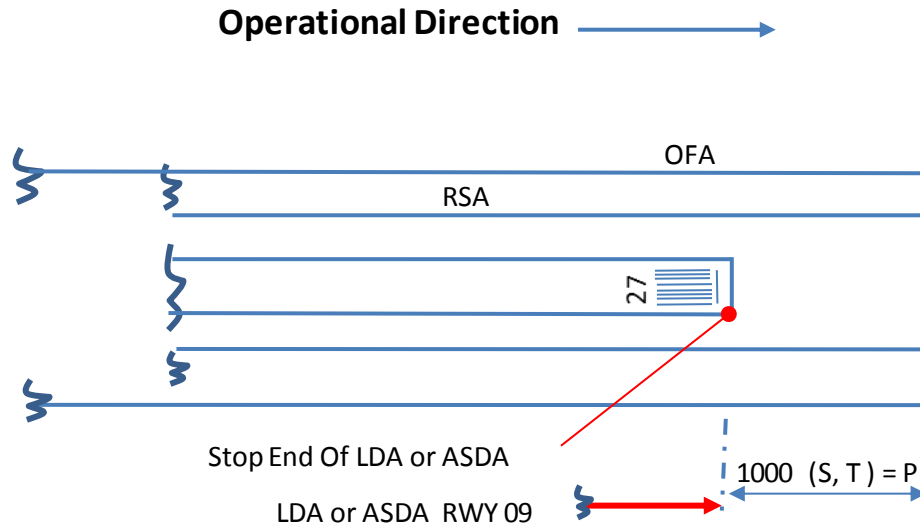


Fig: 3-10 (b) Example of ASDA, TORA and TODA starting further up the runway. (Inrestection Departure)



Declared Distances

ESTABLISHING THE STOP END OF THE LDA OR ASDA



S = Actual or Proposed length of RSA beyond runway end

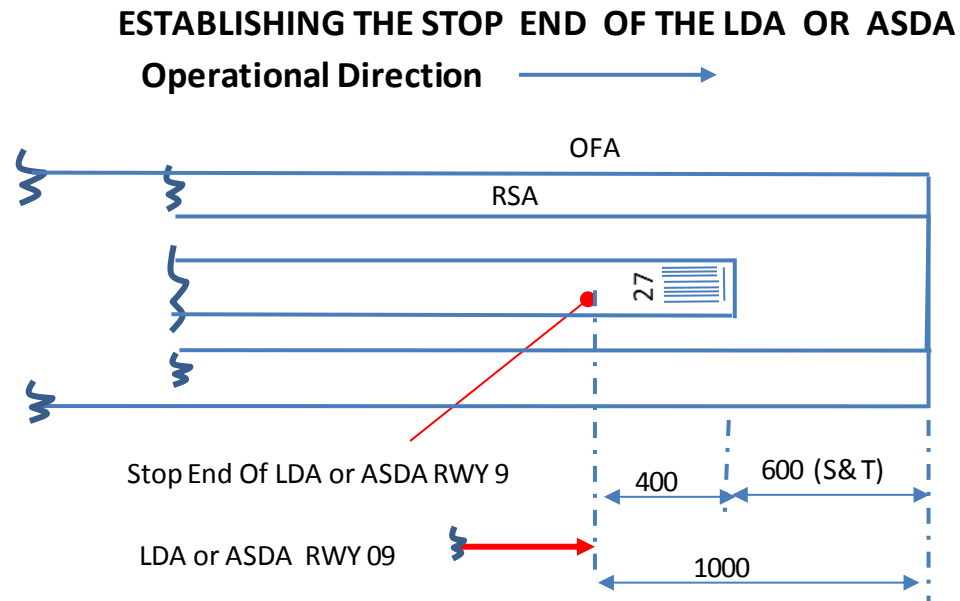
T = Actual or Proposed length of ROFA beyond the runway end

P = **Standard** length of RSA/ROFA beyond departure end or landing stop end (1000 ft. in this example)

Fig. 3-11(a) Example of end of LDA & ASDA where S and T = Standard "P".



Declared Distances



S = Actual or proposed length of RSA beyond runway end

T= Actual or proposed length of ROFA beyond the runway end

P= **Standard** length of RSA/ROFA beyond departure end or landing stop end (1000 ft. in this example)

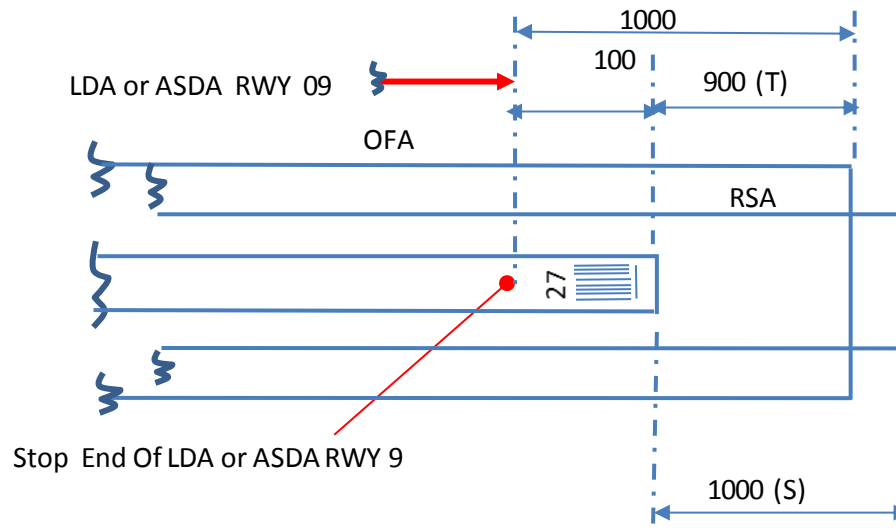
Fig 3-11 (b). Example where end of LDA & ASDA are located to meet RSA standards.

(LDA and ASDA reduced by 400 ft. to provide standard RSA beyond LDA & ASDA)



Declared Distances

ESTABLISHING THE STOP END OF THE LDA OR ASDA Operational Direction →



S = Actual or proposed length of RSA beyond runway end

T = Actual or proposed length of ROFA beyond the runway end

P = **Standard** length of RSA/ROFA beyond departure end or landing stop end (1000 ft. in this example)

Fig. 3-11 (c) Example where end of LDA and ASDA are located to meet ROFA standards.

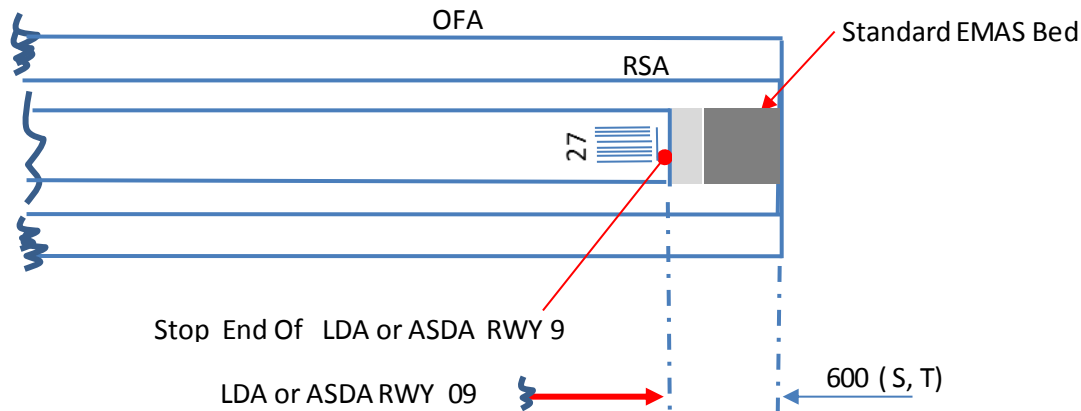
(LDA and ASDA reduced by 100 ft. to provide standard ROFA beyond LDA & ASDA)



Declared Distances

ESTABLISHING THE STOP END OF THE LDA & ASDA CONT.

Operational Direction \longrightarrow



S = Actual or proposed length of RSA beyond runway end

T = Actual or proposed length of ROFA beyond the runway end

P = Standard length of RSA/ROFA beyond departure end or landing stop end (1000 ft. in this example)

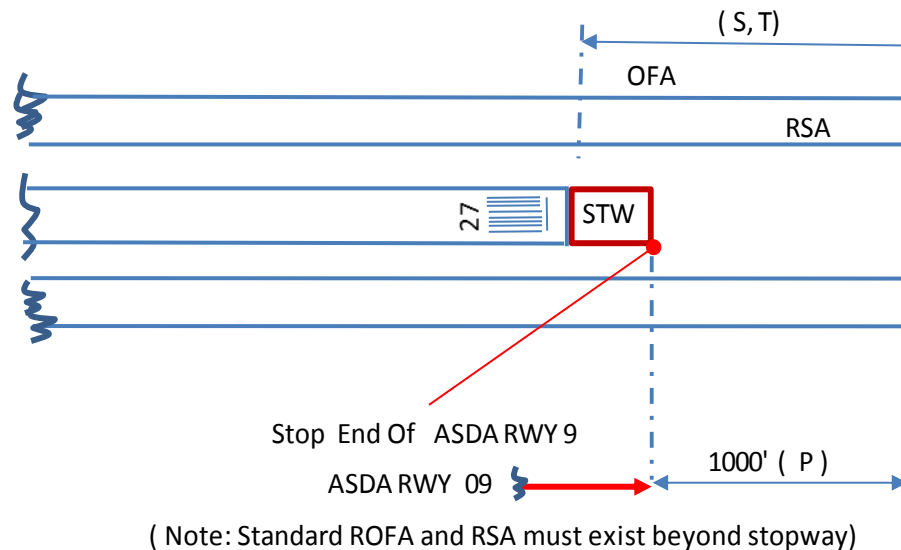
Fig. 3-11 (d). Example where EMAS is used to meet RSA requirements. (LDA and ASDA extend to end of runway 9)



Declared Distances

ESTABLISHING THE STOP END OF THE LDA & ASDA CONT.

Operational Direction \longrightarrow



S = Actual or proposed Length of RSA beyond runway end

T = Actual or proposed length of ROFA beyond the runway end

P = **Standard** length of RSA/ROFA beyond departure end (1000 ft. this example)

Fig. 3-11(e) Example where stopway is included as part of the ASDA. This figure Applies to ASDA only.



Questions

