

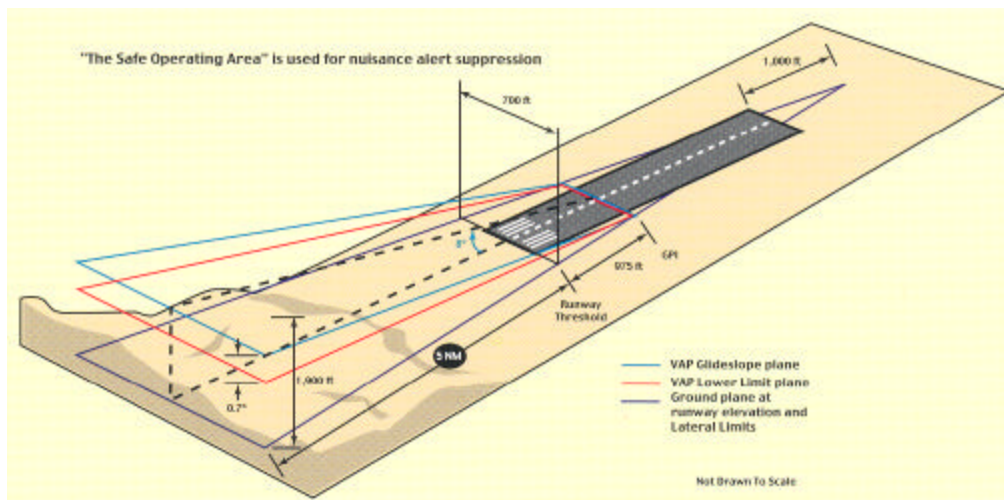
Sandel ST3400 TAWS – How smart is it?

As a very smart *person* once said, “Simplicity is a complex undertaking”. The ST3400 is a *product* that is a living testimony to that concept, a hugely complex piece of technology delivered in a simple, easy to use and understand form.

When we designed the ST3400 we started with a simple concept: the ST3400 had to be the highest performance product available at any price, and be equally at-ease in VFR or IFR flying. This “simple” concept turned out to be rather complex to implement.

The Problem

Making a VFR/IFR capable terrain warning system is easy to do in enroute flying but very hard to do when landing. The biggest problem facing the designer is not how to produce a valid alert, but how to *suppress* an invalid alert. Stated another way, during enroute flying the system logic is relatively simple because since you’re not landing and you can produce an alert by comparing terrain to altitude. But when you’re landing this logic doesn’t work. Why? With the airplane always pointed to the ground, you certainly don’t want false alerts on your way to the ground.



The ST3400 VAP concept of runways. Note that the Virtual Approach Path is based on the terrain itself, *not* an ILS

You might consider the use of the GPS/FMS flight plan to make a determination of the landing airport. But what do you do when you’re not on a flightplan, or what if you fly off-flightplan for any reason (either to a different runway, circle to land, or just plain continuing VFR?). The system must not act differently in those conditions, either by being less safe or by producing nuisance alerts.

