

SmartRunway™ and SmartLanding™

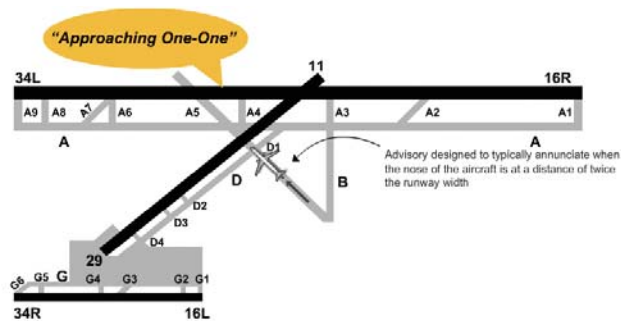
Smart solutions to runway safety during taxi, take-off, approach, landing, and roll-out.



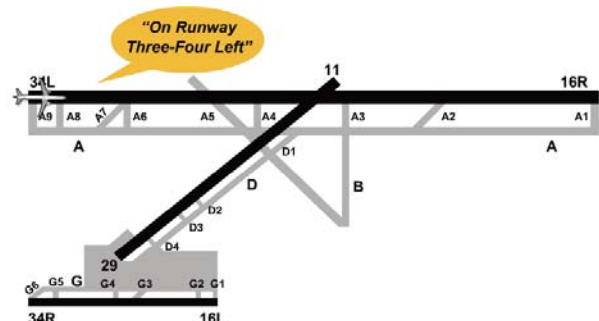
Runway safety is a recurring theme within global safety organizations, such as the NTSB, the FAA and other agencies, as well as pilots and passengers alike. Honeywell's SmartRunway and SmartLanding products are simple software upgrades to existing EGPWS Mk V and Mk VII systems that help break the chain of events that could lead to a runway excursion or excursion. The system is configurable and customers have the ability to choose those call-outs that best fit their operating environment. Below is a simple depiction of how each call-out operates.

SmartRunway Callouts

Approaching Runway – On Ground



On Runway – On Ground

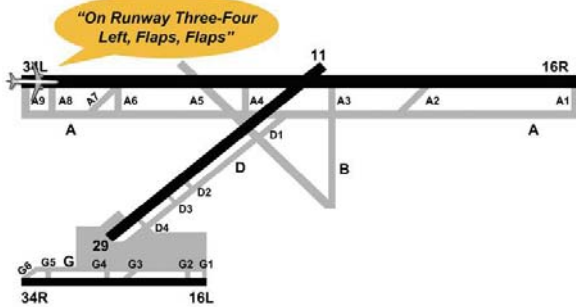


- Function of aircraft groundspeed, track and nearest runway end
- Inhibited above 40 knots

- Aircraft on runway
- Within 20° of runway heading

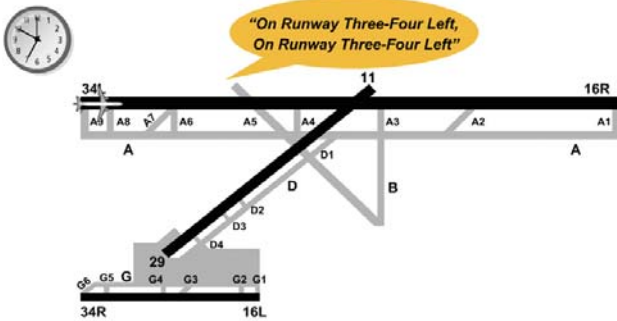
SmartRunway Callouts

Takeoff Flaps Configuration Monitor



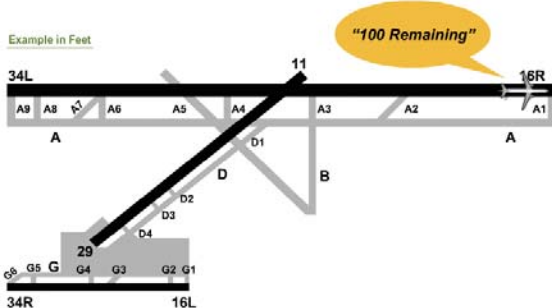
- Aircraft aligned within 20° of runway centerline
- Flaps not in takeoff configuration

Extended Holding On Runway



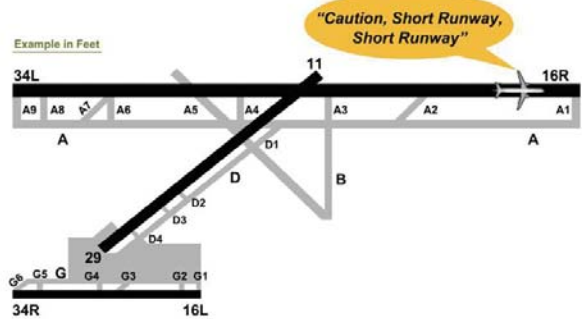
- Within 20° of runway heading
- Holding in position for extended period

Runway End – On Ground



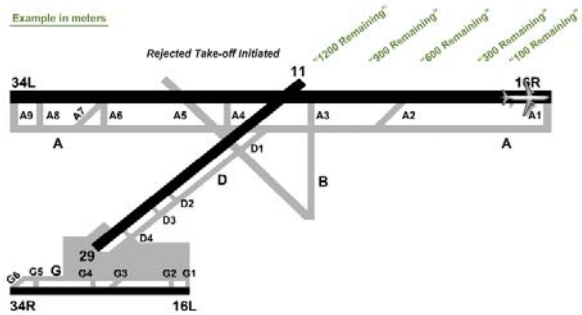
- 100 feet runway remaining
- Ground speed <40 knots

Short Runway – Takeoff



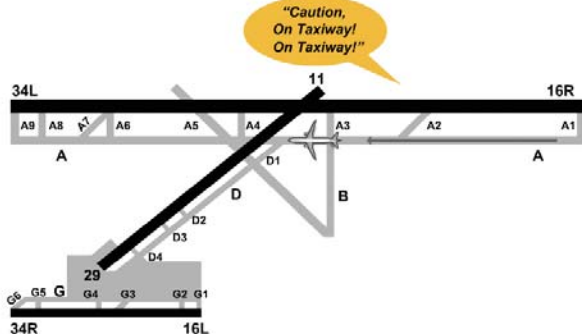
- Runway length available is marginal for normal take-off operations
- Ground speed >40 knots

Rejected Takeoff



- Aircraft on last half of runway
- Max ground speed before abort is >40 knots

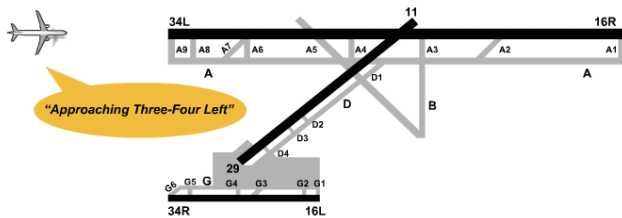
Taxiway Takeoff & Taxiway Takeoff Alert Level



- Aircraft not on runway
- Groundspeed >40 knots

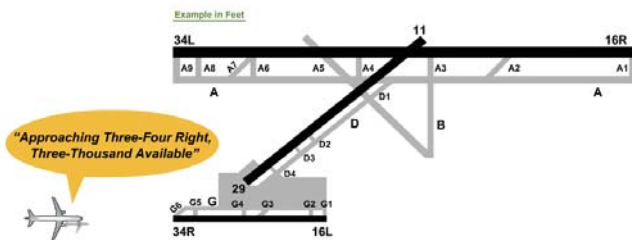
SmartRunway and SmartLanding Callouts

Approaching Runway



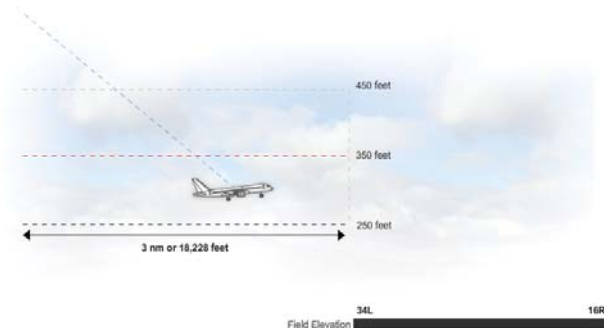
- Between 750 and 300 feet above field elevation (AFE)
- Within approximately 200 feet, plus runway width, of runway centerline

Short Runway – Landing



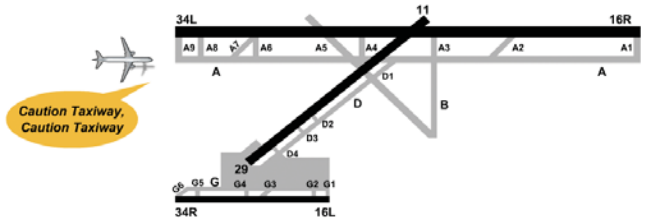
- All approaching runway in-air criteria
- Runway length available is marginal for normal landing operations

Short Runway – Landing (Alert Level)



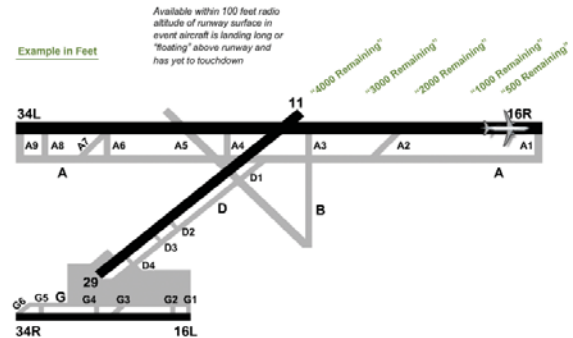
- Between 450 and 300 feet AFE
- Within approximately 200 feet, plus runway width, of runway centerline

Taxiway Landing



- Between 250 and 150 feet Above Ground Level (AGL)
- Not aligned with runway

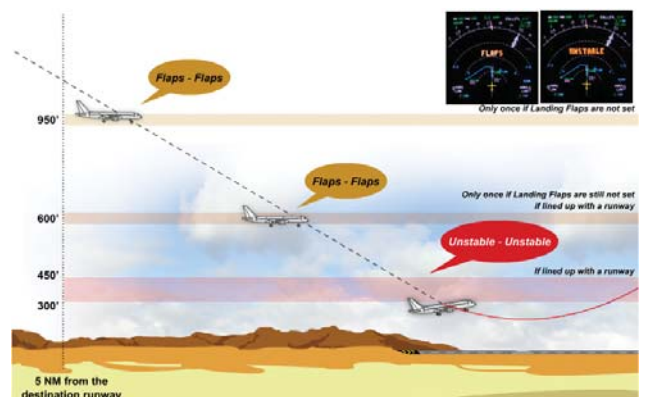
Distance Remaining Landing & Rollout



- Aircraft on/above last half of runway within 0 to 100 feet radio altitude
- Ground speed >40 knots

SmartLanding Callouts

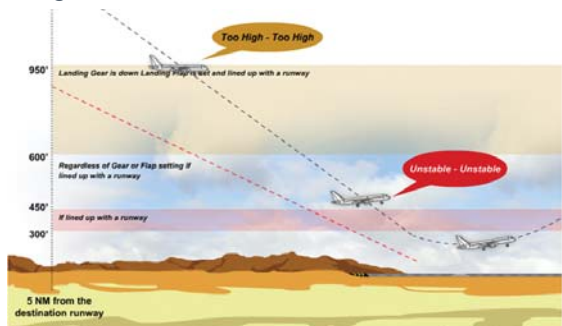
Flaps During Approach



- Flaps are not set
- Aircraft must be lined up with runway

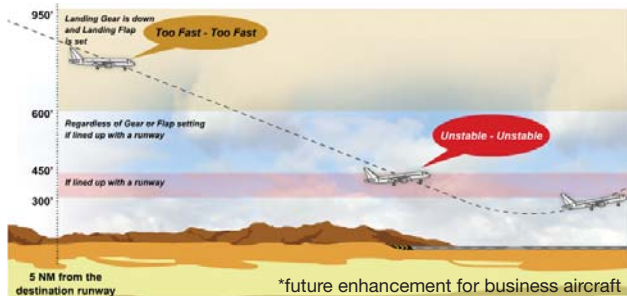
SmartLanding Callouts

Too High



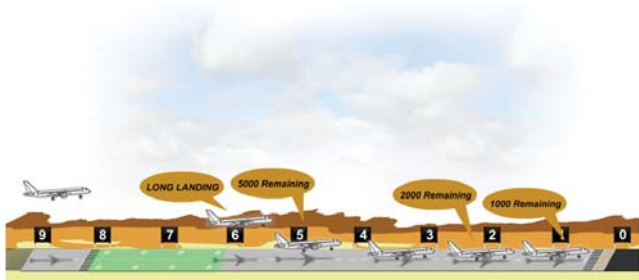
- Landing gear is down
- Landing flap is set

Too Fast*



- Landing gear is down
- Landing flap is set

Long Landing (Approach End)



- Aircraft is airborne above 5 feet AGL, but below 100 feet AGL
- Aircraft has passed customer specified distance from runway end

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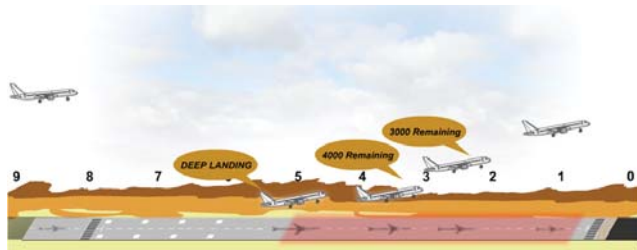
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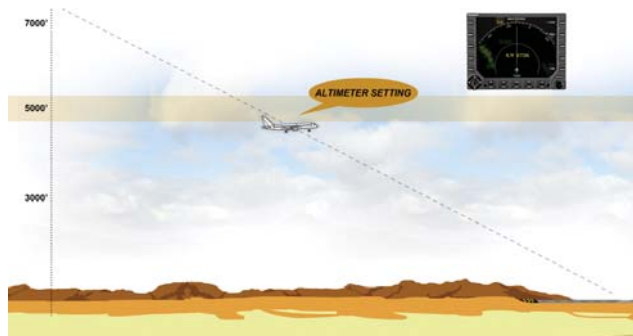
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Long Landing (Deep Landing)



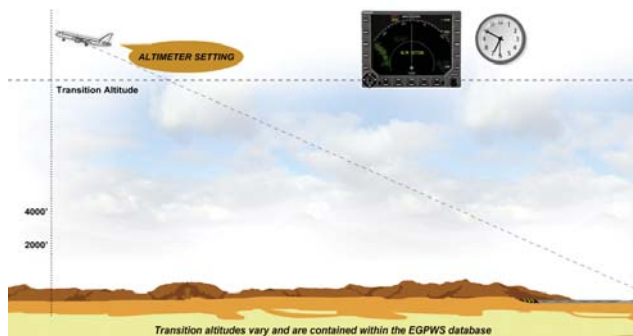
- Aircraft is airborne above 5 feet AGL, but below 100 feet AGL
- Aircraft has passed customer specified distance from runway end

Altimeter Landing During Approach



- Aircraft has descended below the transition altitude (from dbase) for more than 30 seconds or height above field is less than 1500 feet

Altimeter Setting During Climb



- The aircraft has been above the transition altitude (from database) for more than 30 seconds but not more than 5 minutes

Honeywell