

Section 17

Audio Voice Alerting Device - AVAD

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General Description

All Bristow AS332L helicopters are fitted with Audio Voice Alerting Device – AVAD. It currently consists of two elements. They are –

1. **Surface Proximity Warning System**
2. **Undercarriage Up Warning System**

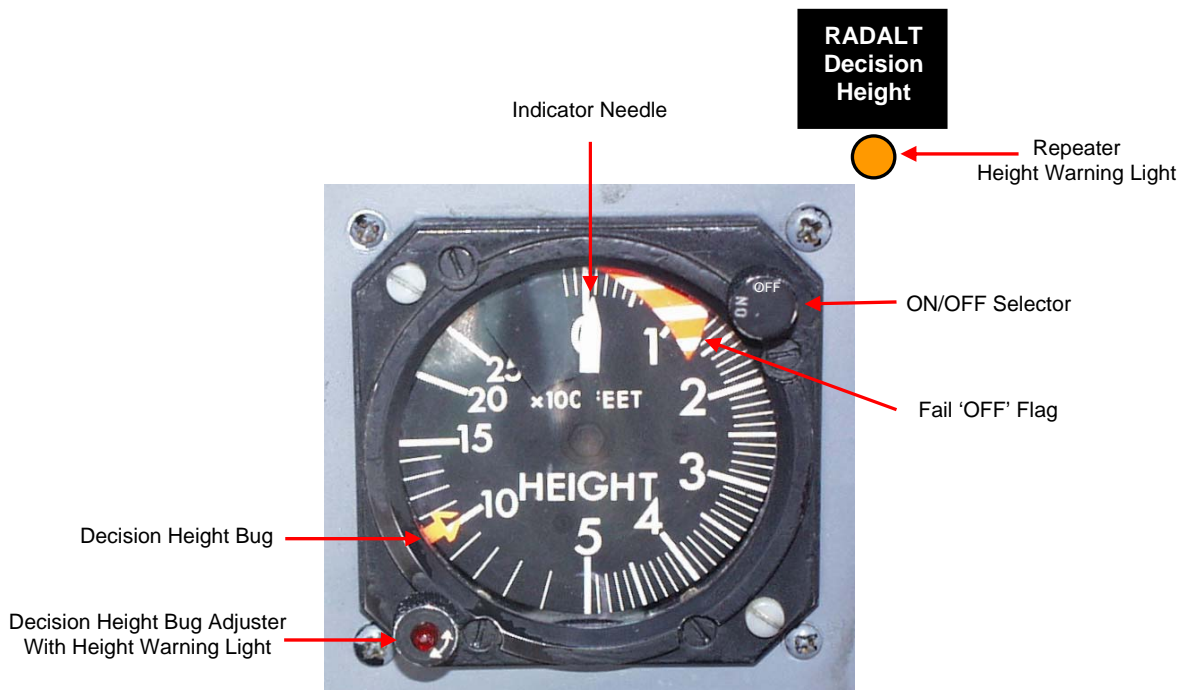


Figure 1 – Radio Altimeter

Surface Proximity Warning System

The Surface Proximity Warning System (SPWS) works through the Radio Altimeter or 'Radalt' and produces a warning light and an audio warning should some predetermined parameters be reached.

There is one radio altimeter and two repeater instruments (one for the pilot and one for the co-pilot). Each instrument has a rotating 'bug' and an orange warning light. Should the pilot descend below a height that is marked with the rotating decision height 'bug' on the radalt sub-scale, a light will come on accompanied by an audio warning.

If the radalt 'bugs' are set at different heights, then the repeater instrument with the higher setting will get an amber warning light illuminating when the 'bugged' height is passed. When the aircraft descends through the lower 'bug' setting, the repeater instrument with this lower setting will also get an amber warning light illuminating and both crews will hear an audio 'Check Height' in their headset.

Audio Warnings

If the helicopter descends through 100 feet radio altitude, the message '**One Hundred Feet**' preceded by a warning tone is heard through both crew headsets. **The crew can not inhibit this warning.** The message '**Check Height**', preceded by a more urgent tone and repeated after 4½ seconds is heard whenever the helicopter descends through the lower of the two Decision Height 'bug' settings selected on the radalt. This warning is inhibited for a period of three minutes following the pressing of the AVAD inhibit button on the cyclic.

If the AVAD has been inhibited, operating the AVAD TEST/RESET switch to reset will cancel inhibition.

To avoid nuisance warnings, the system is designed to recognise the very large apparent rates of descent, which occur when crossing the edge of an offshore helideck or when the radalt spikes. On these occasions the system is automatically inhibited.

CAUTION - Because the 'One Hundred Feet' and the 'Check Height' warnings have the same priority, a 'Check Height' warning in progress will delay the 'One Hundred Feet' warning. This can result in the 'One Hundred Feet' warning being heard at heights significantly below one hundred feet.

System Equipment

1. A Racal AVAD unit mounted in the electronics bay beneath the left cockpit floor.
2. An AVAD control panel mounted on the centre console.
3. An **AVAD** Fail Caption mounted on the 32∞ Panel.
4. An AVAD inhibit button on both pilot's cyclic sticks.
5. Electrical power is supplied from two circuit breakers, one on 2PP6 and one on 2PP5 panels.

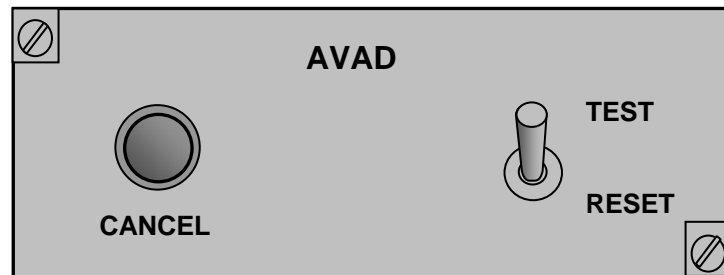


Figure 2 – AVAD Panel on Centre Consul

System Testing

1. There is a switch marked AVAD TEST/RESET on the centre console. With the radalt switched ON, place the toggle switch to the TEST position. You should hear the 'AVAD Test' audio warning. After about 2 seconds the **AVAD** warning light should appear on the 32∞ panel accompanied by an amber **WARN** light. Place the switch to RESET and the **AVAD** warning light should extinguish.
2. Press the TEST button on the radalt itself. The indicator should read 100 feet ± 10 feet. Wind the orange bug up through 100 feet and the 'Check Height' audio warning should be heard.

AVAD Height Warnings - Crew Action

If a 'Check Height' warning or an unexpected 'One Hundred Feet' warning is heard, the Commander must state the indicated altitude and his intentions to ensure safe separation of the aircraft from the surface.

Undercarriage 'Up' Warning System

This system works through the AVAD equipment in conjunction with the pitot system.

If the airspeed is below 60 kts and any one undercarriage leg is in the retracted position, an audio warning will sound in the pilots headset saying '**Undercarriage – Undercarriage**' followed by a pause for 5 seconds, after which the warning will be repeated. This is in addition to the two flashing red lights on the instrument panel.

Pressing the CANCEL button on the AVAD control panel during the warning sequence will cause only the undercarriage warning to be cancelled.

The system is tested as above. The only audio heard on testing is '**AVAD Test**'. The only time you will hear '**Undercarriage Undercarriage**' is when you try to land with the wheels up.