

# HeliSAS® for OH-58/UH-1

Lightweight, affordable stability  
in an unstable world

**COBHAM**

The most important thing we build is trust



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## HeliSAS® Autopilot and Stability Augmentation System

The HeliSAS® Autopilot and Stability Augmentation System was specifically designed for lighter airships, such as OH-58 and UH-1 helicopters, to deliver a number of workload reduction and safety enhancements:

**Significant stability improvement.** Pilots with no helicopter experience have successfully hovered a HeliSAS-equipped helicopter with very little practice.

**Automatic recovery to near-level flight.** If the helicopter is inadvertently flown to an extreme attitude, releasing the cyclic when the HeliSAS is engaged will automatically return the helicopter to a near-level attitude (roll trim limits are +5° to -5° and pitch trim limits are +11° and -6°).

HeliSAS provides many of the functions found in heavy, expensive helicopter autopilots, but at a fraction of the cost and weight.

- **Safe.** Enhanced control while dramatically reducing pilot workload.
- **Lightweight.** Parallel design = fewer components = total system weight of less than 16 pounds.
- **Affordable.** Cost-efficient safety feature for Part 27 helicopters.
- **All-Digital.** Full-authority system based on a dual-processor, fail-passive architecture.



The HeliSAS® control panel is pictured here at its actual size of just 5.75" x 0.75". The unit weighs 0.48 pounds. NOTE: All functions can be used in flight at airspeeds above 44 knots.

## HeliSAS

HeliSAS Autopilot and Stability Augmentation System provides the following functions:

**SAS.** This is the system engagement button. SAS provides attitude stabilization at all speeds.

**HDG.** Selects the desired heading the pilot wants to fly. If a Horizontal Situation Indicator (HSI) is installed, HeliSAS will fly to and maintain the heading selected by the heading bug. If there is no HSI, the HDG function will maintain the existing GPS track.

**NAV.** The active GPS, VOR, or Localizer course will be automatically intercepted and tracked when NAV is engaged. VOR and Localizer coupling require an HSI. GPS does not.

**BC.** HeliSAS will intercept and fly a back course localizer approach (requires an HSI).

**ALT.** Maintains the existing altitude for an indefinite period.

**VRT.** Vertical navigation allows automatic flying of ILS glide slope or GPS VNAV if a WAAS-enabled GPS is installed. Both functions require an HSI.

## Components

HeliSAS system consists of six components:

### 1. Digital Flight Control Computer

- Functions as SAS computer
- Provides attitude hold function

### 2. HeliSAS Control Panel

- Installed with full autopilot, provides the functions of:

- HDG: Heading Select and hold

- ALT: Altitude hold

- NAV:

1. VOR intercept and tracking
2. Localizer intercept and tracking
3. GPS intercept and tracking
4. BC: Localizer backcourse tracking

- VRT:

1. Glide slope intercept and tracking
2. VNAV

### 3. Attitude Gyro or Air Data / Attitude and Heading Reference System (ADAHRS)

- Attitude gyro is panel-mounted
- Cobham ADAHRS is installed with integrated system (display and HeliSAS)

### 4. Pitch Servo

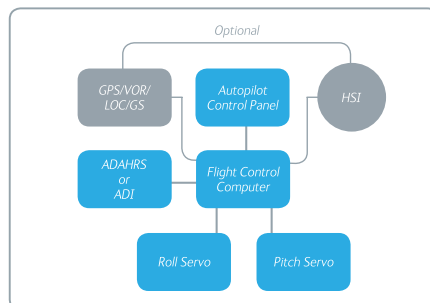
- Controls aircraft rotation about its lateral axis
- Provides cyclic stick anchoring (position holding) with "SAS On"
- Provides artificial force gradient and re-centering when cyclic is displaced from anchor point

### 5. Roll Servo

- Controls aircraft rotation about its longitudinal axis
- Provides cyclic stick anchoring (position holding) with "SAS On"
- Provides artificial force gradient and re-centering when cyclic is displaced from anchor point

### 6. Cyclic Control Buttons

- Existing cyclic control can be used in most cases
- A trim button is required
- An autopilot / SAS release/engage button is required



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