

What are the airliners equipped with head up displays?

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Originally Answered: What are the commercial aircraft equipped with head up displays?

All 787's are coming equipped with 2 HUD's (one on each side for both pilots)



Some 737-700/800/900 aircraft are fitted with a single HUD on the Captain's side only. (Usually called Head Up Guidance System HUGS)



Horizon Air also have HUDs fitted on their DH8D Q400 aircraft.

A HUD (or HUGS) can mean that the aircraft can be certified to land in lower visibility categories than would otherwise be possible, meaning the airline can operate to airports in worse weather conditions.

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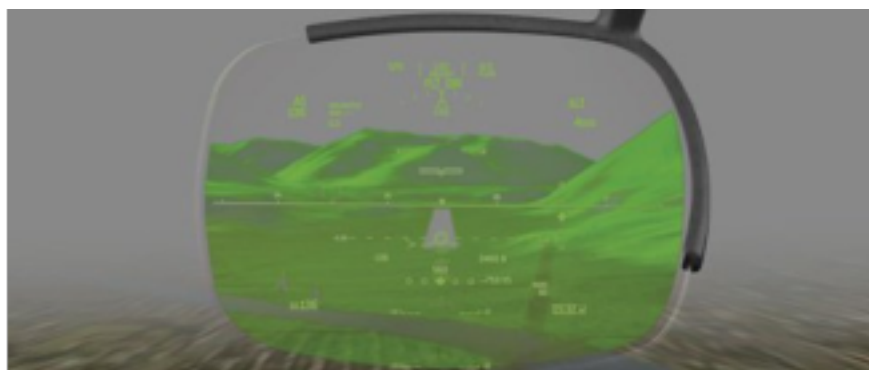
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directed to where the runway will be, which may be useful in poor visibility + crosswind situations, where the runway will not show up "straight ahead". This can mean the difference between not acquiring the lead-in strobes and going around, or not going around in marginal weather.

A "velocity vector" can literally be placed on the runway, and the aircraft will fly directly to the point indicated on the outside picture.

Future applications in development may also include Traffic avoidance and awareness, airspace classifications, synthetic vision of terrain and so on to increase situational awareness to near-VMC conditions in IMC.



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Originally Answered: What are the commercial aircraft equipped with head up displays?

The Boeing 787 comes standard with HUDs.





Aviation Week

Some carriers have been using 737NG's with HUDs, but only on the captain's side. It's generally only used for low visibility conditions, particularly on landing. Alaska Airlines has been flying them since 2003: [Technology Flies High on Boeing 737](#).

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I don't think there are any airliners w... There is no need for this technology

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Head up displays and fighter pilots are unique ability to see both their instruments and weapons status outputs along with a visual look at what is in front of them (their target). This is a very expensive technology that has no application for air transport operations.

Airliners operate mostly on instruments. The instrument panel is located in front of the pilots but below the clear windshield. Virtually all flight is done by reference to the instruments with no need to see any

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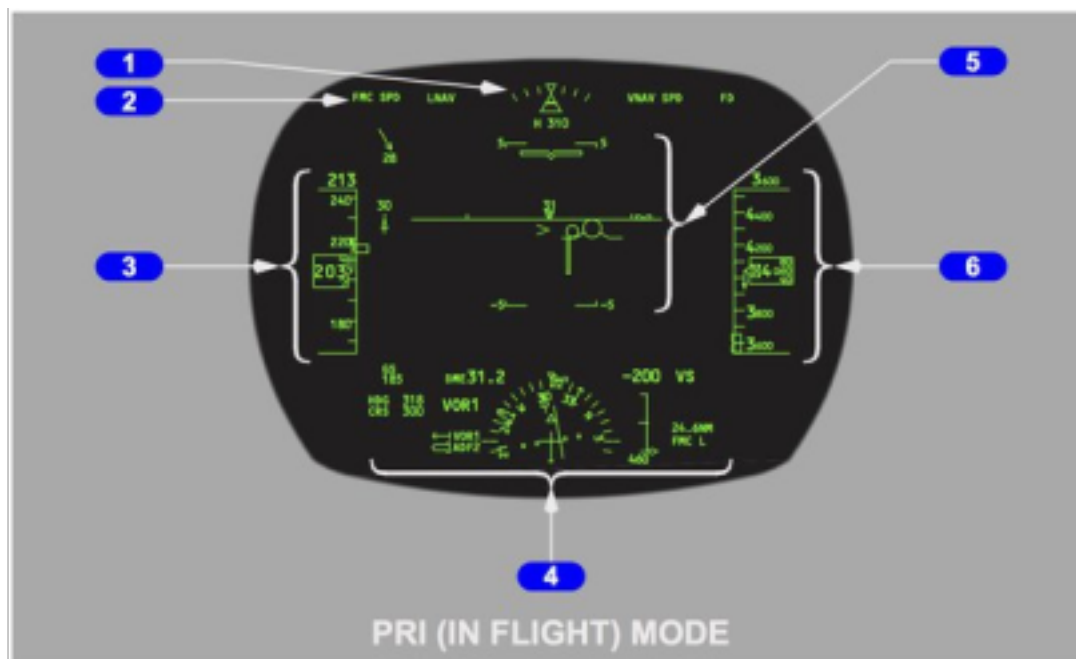
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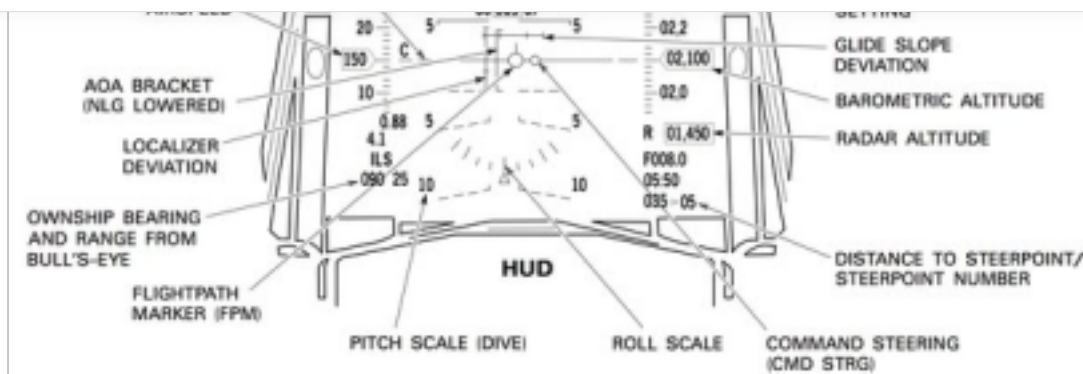
Related **How different are head up displays in fighter jets and airliners?**

Let's compare with pictures! Here's the heads-up display of the Boeing 737NG (next generation) in PRI (primary) mode:



And here's the heads-up display of an F-16C in NAV (navigation) mode:





You'll note a lot of similarities. From left to right...

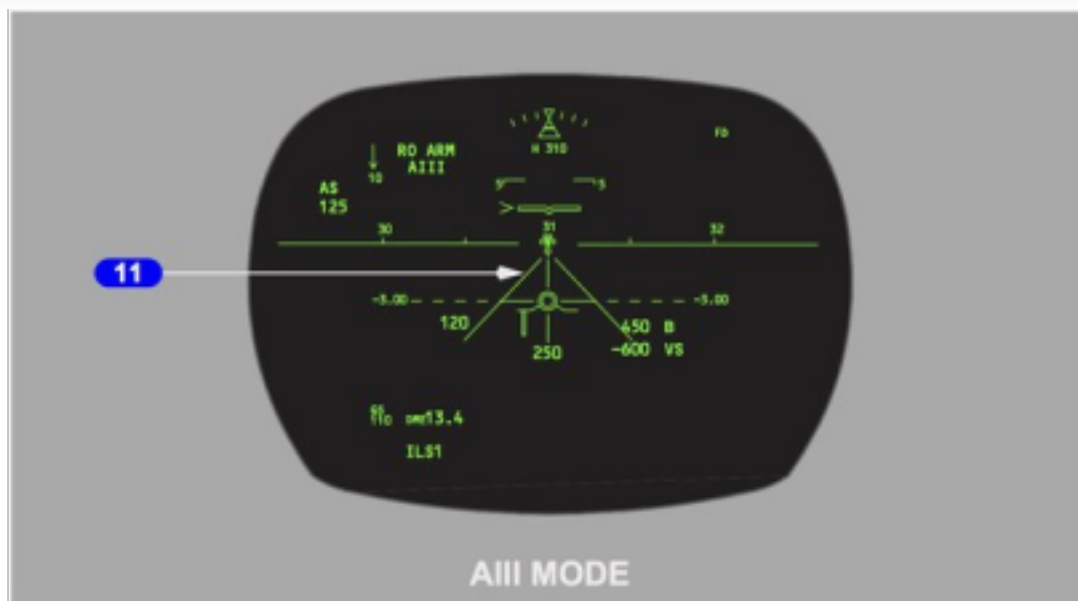
- Both aircraft have the airspeed tape on the left side, with an airspeed window. (As a pedantic note, though, the 737 displays indicated airspeed while the F-16 displays calibrated airspeed.)
- In the center, both aircraft have a horizon line, pitch ladder, and flight path marker. The horizon line is the long, horizontal line. The pitch ladder are the horizontal brackets above and below it, marking 5° increments of pitch. The flight path marker (FPM) indicates the aircraft's total velocity vector (TVV), or in English, "where it's headed." On the 737 it's the circle with wings; on the F-16 it's the circle with wings and a tail.
- Both HUDs have a "tadpole", a small, un-spoked circle that indicates where to put the FPM in order to fly your selected course.
- Both HUDs show heading: In the 737, it's the circular compass at the bottom. In the F-16, it's the horizontal tape at center top.
- Both aircraft show bank: In the 737, it's the indexed arc at the very top center. In the F-16, it's at the bottom center.
- At the top is the "watermark" which shows the aircraft's nose position. It's the wide "W" on the 737 display (and also on the F-16 display, though it's obscured in the above image).
- The rightmost tape for both aircraft shows altitude, with an altitude window.
- Both aircraft have a data block on the bottom right showing distance to the next waypoint, as well as other information.

Though the general layout is the same, there are significant differences too. The 737 displays a lot more autopilot information, because it has a more sophisticated autopilot. Along the top, it shows the autopilot mode, and above each tape it also shows the current autopilot airspeed/altitude reference. The 737 also shows the current wind direction and speed in top left, and the rate of climb right of the compass. Navigation radio information is shown left of the compass.

The F-16 includes current and maximum G below the airspeed tape, as well as bullseye position (something only used by the military). Below the altitude tape is the radar altitude, something only shown on the 737 HUD during approach and landing.

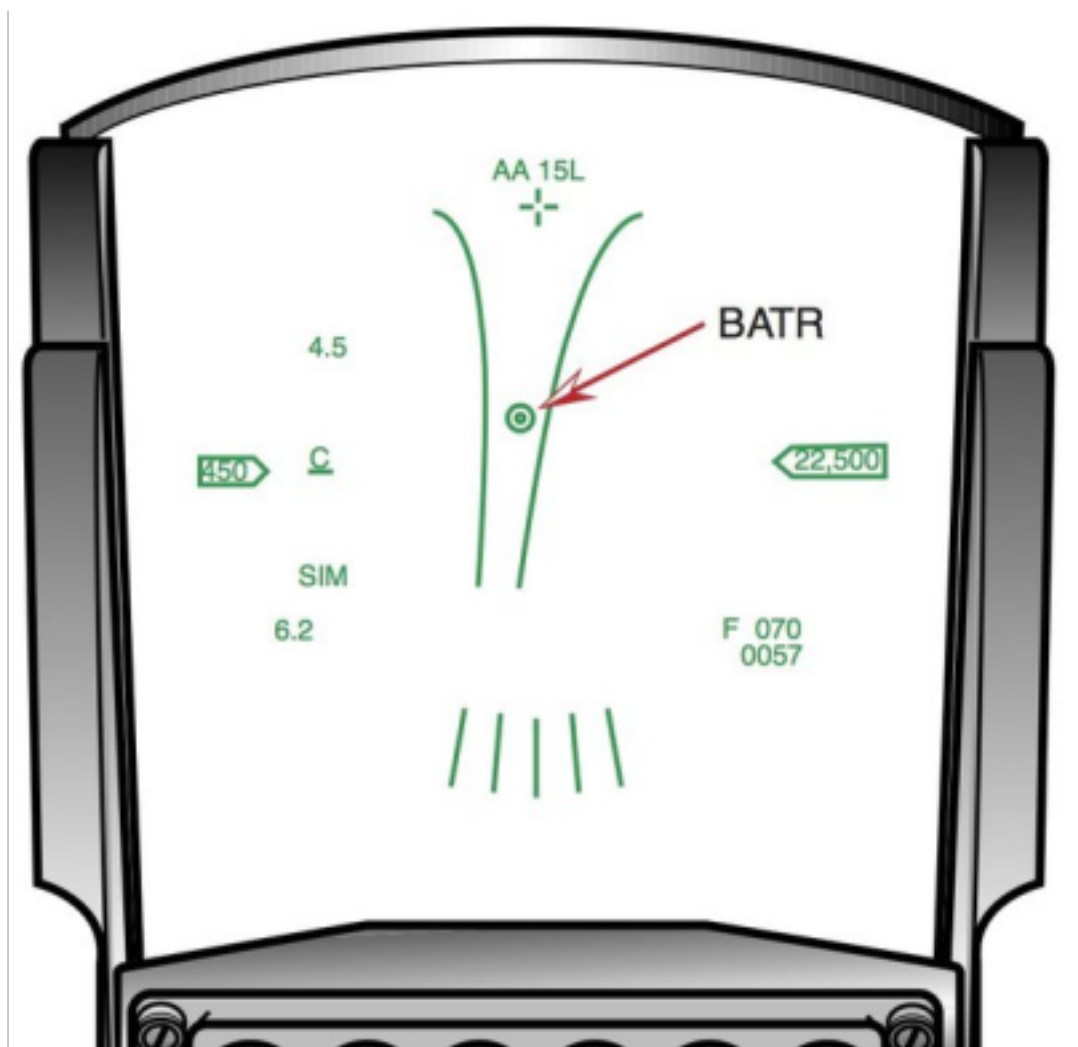
Where the HUDs get really different, however, is the other mission-specific HUD modes.

Both aircraft have a lot of different HUD modes that completely diverge from one another, and are directly related to that aircraft's specific role.



In this HUD mode, the runway is rendered visually in the pilot's field of view. The HUD is significantly decluttered with a focus on landing: altitude and airspeed tapes are replaced with digital numbers, radar altitude is displayed below the runway representation, and the 3° ideal pitch line is prominently shown.

Similarly, the F-16 has a very decluttered HUD mode intended specifically for dogfighting:



The most important thing to look at when in a dogfight is your enemy, so most of the other information on the HUD is removed. Altitude and airspeed tapes are replaced with digital readouts, and most all the data blocks are removed except G force and master arm status (SIMulated) on the left and distance to target on the right.

This HUD also adds weapon symbology. In the center is the EEGS (electronically enhanced gunsight, also known as the "funnel"), which shows the fall path of bullets fired. The dot in the center, bullets at target range (BATR, called the "death dot") shows where bullets would land when fired now and traveling a range equal to target range. At the very top is the target's aspect angle (its nose is pointed 150° left of your heading), and along the bottom is the MRGS (multiple reference gunsight) that helps pilots line up snapshots.

The 737 lacks this HUD display for obvious reasons.

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As of my last knowledge cutoff in September 2021, several airliners were equipped with head-up displays (HUDs) to assist pilots during flight. Some of the common commercial aircraft equipped with HUDs included:

1. Boeing 787 Dreamliner: The Boeing 787 Dreamliner features an advanced HUD system that provides critical flight information to the pilots without them having to look down at the instrument panel.
2. Airbus A380: The Airbus A380, the world's largest passenger airliner at the time, also offered HUD systems to enhance situational awareness for its pilots.
3. Airbus A350: The Airbus A350 XWB (Extra Wide Body) is another modern airliner that comes equipped with HUD technology to improve safety and efficiency during flight operations.
4. Boeing 737 MAX: The Boeing 737 MAX series of aircraft also offers optional HUDs to help pilots with critical flight data display.


HUDs are becoming increasingly common in modern commercial aircraft as they provide valuable information directly in the pilot's line of sight, helping to reduce workload and enhance safety during all phases of flight. For the most up-to-date information on which airliners are currently equipped with HUDs, I recommend checking with the respective aircraft manufacturers or airlines.

- Tell me more 
- What are the features of the head up displays in the Boeing 737 MAX? 
- Are there any other airliners that have head up displays? 
- Can you give me more information on the head up displays in the Bombardier CSeries? 

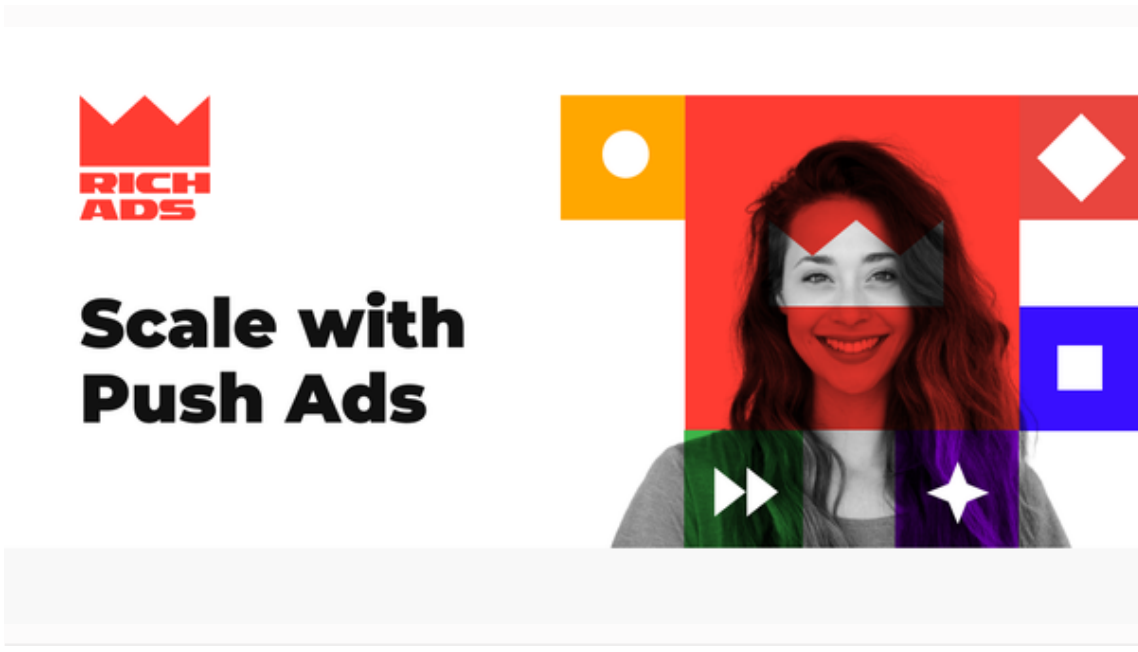
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Related **What was the first fighter aircraft to have a viable heads-up display, and how useful was that display?**

The concept of the HUD dates back to reflector sights used in fighter aircraft during World War II. These early systems projected simple aiming points onto a glass plate, allowing pilots to aim their weapons without looking down at their instrument panels. These were not HUDs in the modern sense, as they could not display comprehensive flight data.

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Krishna Kumar Subramanian



A REAL Aircraft Engineer, Aircraft Systems Educator from IIT · Author has 19.1K answers and 1... · Sep 1

Every airliner since the Airbus A310 offers the HUD as an option.

Few airlines have opted for it, but there are some whose operating conditions make the HUD useful.

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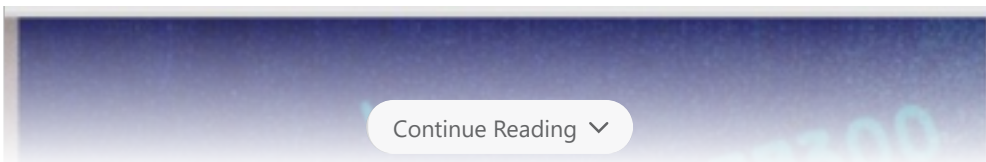


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It takes a few minutes to get used to the idea of flying in the clouds while looking out the windshield.

Years of instrument flying have conditioned pilots to scan the panel, but with the new head-up display (HUD), punching through solid clouds without even a glance at the instrument panel is normal.



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David J Wong

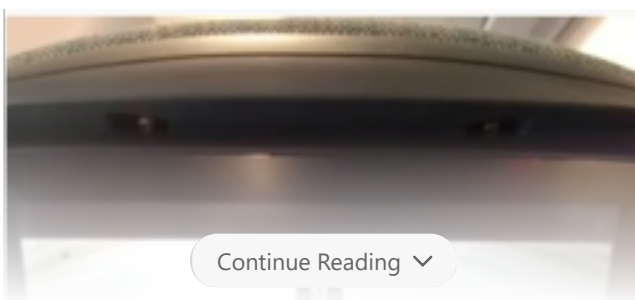
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Certain airlines on certain passenger plane models do have external cameras that passengers can view.

For example, Cathay Pacific's newer B777s and A350s have a camera on the belly of the plane and another one on the tail that can be viewed on their inflight entertainment system. I almost always have this on when the plane is taxiing, or for takeoff and landing.



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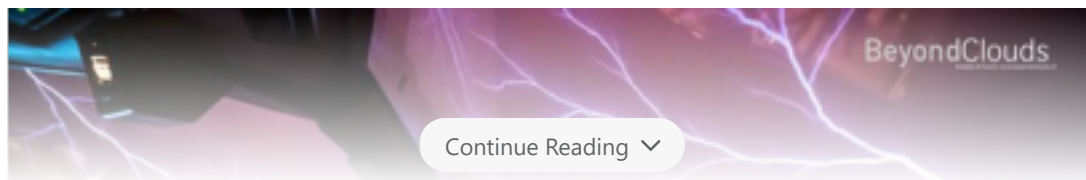
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Because our unions would riot and we simply wouldn't allow it. Im sorry, I am an airline captain not a fucking goldfish. My job is safely operating a 600K+ pound machine with 300+ passengers aboard, not sitting in a fishbowl being watched. I wouldn't stand for it. Furthermore it would be a truly terrible business decision. There are a lot of screens, indicators, annunciators and other sights that, while perfectly normal to us, would cause the passengers to literally shit their pants with fear. Jesus could you imagine people not familiar with Saint Elmo's Fire seeing this on the cockpit cam.



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Confessions of a HUD Cripple.

That is what we call pilots who have flown HUDs, because after a short time, they get so attached to it that they don't want to ever fly without one. I have not flown the Airbus, but I have flown and instructed on the B787. Before that, I flew the B-787NG, which had , what appeared to me to be a nearly identical but even slightly better HUD.

The 737NG HUD had a "flare c

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Anas Maaz

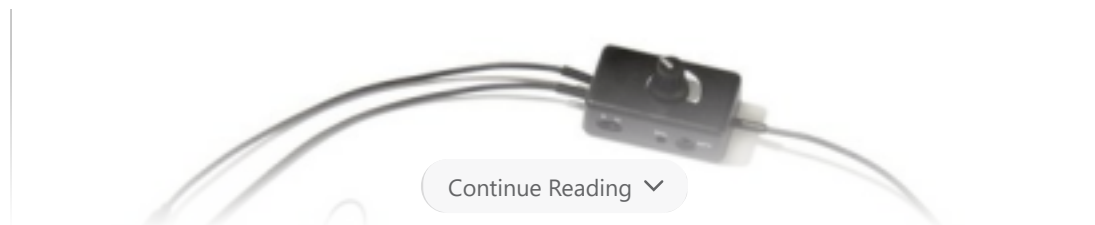
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I mainly see high end Bose, David Clark and sennheiser headsets. As I fly Dash 8s in my airline at the moment, most headsets used by the pilots have artificial noise cancellation. I cannot say on what the Airbus guys use. A Telex airman 750 is good for the aircraft (Dash 8), but in weather and in high power engine situations (mainly in take off and in reverse), it is not the best hearing device to have. Airman 850, I heard is a bit better.

Now, I see many using Clarity aloft headsets. I have ordered one two days ago after some pilots recommending me to buy one. It looks like this.



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Marc Hoag

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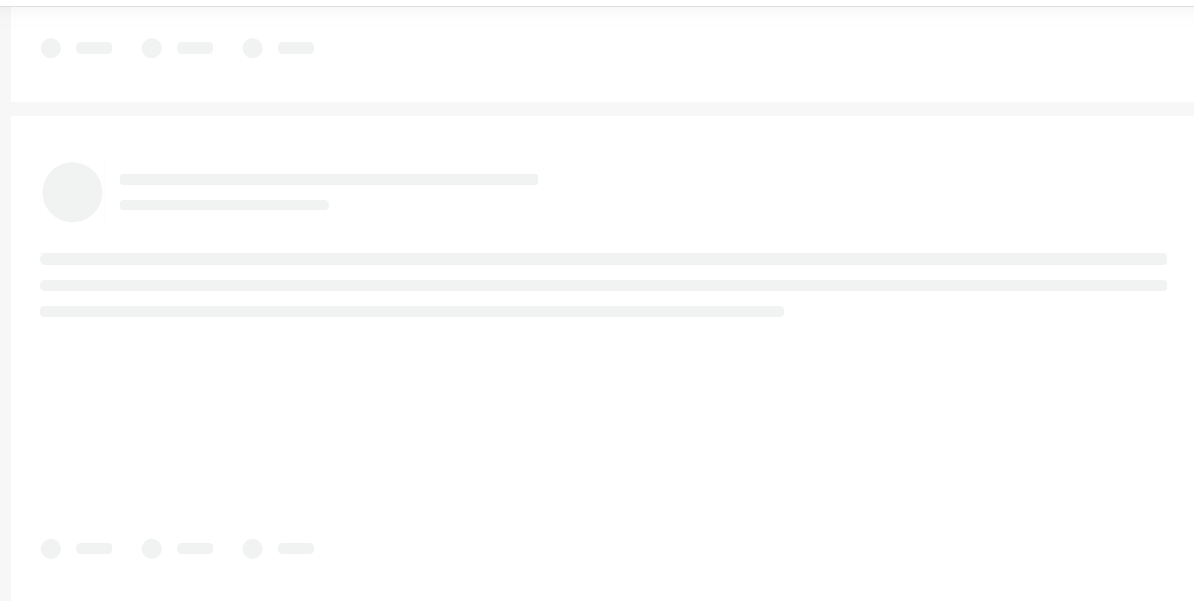


Originally Answered: What are the commercial aircraft equipped with head up displays?

Pretty sure that 777s have HUDs too.

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