

## AVCATT AH-64 HMD CONCERNS

### References

AR 95-1, paragraph 4-5 b. states: "The ATP outlined in the ATM (Aircrew Training Manual) is mandatory for all military aviators assigned to operational aviation positions and all other crewmembers specified in the ATMs".

TC 3-04.42 (TC 1-251), AH-64D ATM, Conditions, paragraph 4-1 c. states: "All conditions must be met before all task iterations can be credited".

TC 3-04.42 (TC 1-251), paragraph 4-1 c, (5), Common conditions are: (5). (g). "Pilot on-the-controls (P\*) and pilot not on-the-controls (P) fitted with a boresighted Helmet Mounted Display Unit (HDU).

TC 3-04.42 (TC 1-251), Task 1132, 2.c. (3) Infinity focus adjustment states: "Adjust the infinity focus collar on the HDU for (grayscale) sharp raster line definition. Rotate the infinity focus collar, as it is worn, fully counter clockwise. The grayscale will appear blurred. The mechanical focus of the HMD will now appear blurred. The mechanical focus of the HMD is now set to a positive diopter value (beyond infinity). If distance objects are present, look through the combiner lens past the windscreen at the most distant object available (200 foot minimum) to keep the eye relaxed for infinite focus. If no distant objects are present, it is important to have the correct mental set (ability) and allow the eye to relax."

TC 3-04.42 (TC1-251), Task 1132, Note 1. The focus ring on the HDU compensates for the variation in visual acuity among aviators. The infinity focus ring/collar allows each individual to focus the image to infinity.

TC 3-04.42 (TC1-251), Task 1132, Note 2. **Focusing in on anything less than infinity cannot be maintained for prolonged duration without creating eyestrain and other negative effects.**

Empirical data shows that negative effects include headaches, visual distortion, and possibly simulator sickness.

### Findings

The AVCATT Hemet Mounted Display (HDU) AH-64D configuration doesn't have an infinity focus adjustment. Additionally, the pilot and co-pilot stations do not have an IHADSS grayscale adjustment. Consequently, AH-64 aviators are forced to fly with an out-of-focus visual display. This deficiency causes physical discomfort and many AH-64 aviators refuse to fly with the AVCATT HMD.

### Recommendations

In order to complete ATM performance tasks in the AVCATT, develop a means for the AH-64 aviator to adjust the AH-64 flight symbology on the HMD.

