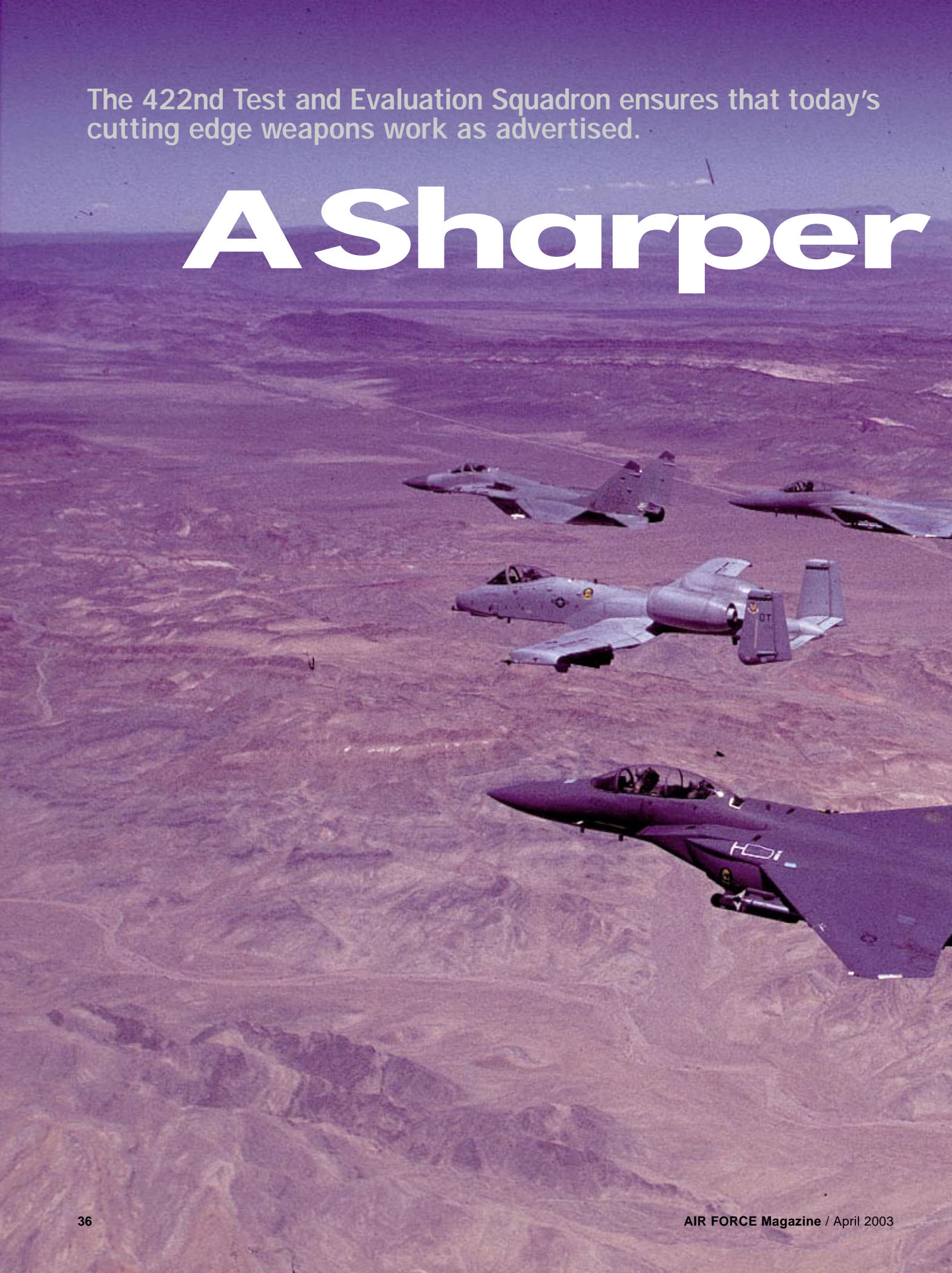


The 422nd Test and Evaluation Squadron ensures that today's cutting edge weapons work as advertised.

# A Sharper





# Sword

Photography by Jim Haseltine

*From bottom: An F-15E Strike Eagle, an A-10, F-15C, and an F-16C, all from the 422nd Test and Evaluation Squadron, fly with a visiting German MiG-29 (top left) in formation over the test range at Nellis AFB, Nev.*



***The 422nd Test and Evaluation Squadron is a composite unit that conducts operational tests of A/OA-10, F-15C/E, and F-16C hardware and software enhancements prior to release to combat forces. It is subordinate to the 53rd Wing at Eglin AFB, Fla., but is located at Nellis AFB, Nev., where the unit takes advantage of the superb training ranges at that base. The unit is responsible for bringing USAF's next generation fighter, the F/A-22, into the operational arena.***

***The 422nd dates to the World War II-era 422nd Night Fighter Squadron.***



***The 422nd tests improvements to existing technologies as well as aircraft and munitions innovations. The unit is responsible for writing the book on the use of new developments in hardware and software so that frontline crews that get the latest in warfighting technology can employ it—fast.***

***At left, one of the squadron's A-10s returns home from a test mission.***

***The 422nd also conducts foreign materiel exploitation and special access projects. Its crews frequently fly with other forces, such as the US Navy and Marine Corps and foreign air forces. One opportunity included members of the German Luftwaffe's MiG-29 squadron. The two units compared the new USAF AIM-9X missile with the older Russian-made AA-11 Archer missile.***

***At right, an F-16, a MiG-29, and (in back, just visible) an F-15 on the flight line at Nellis.***





*Above, an AIM-9X is visible against a white-tipped AIM-120 AMRAAM, both mounted on an F-15C. At right, an F-16 pilot is wearing the Joint Helmet Mounted Cueing System. JHMCS lets a pilot fire a missile in the direction in which he is looking, not necessarily in the direction the aircraft is flying.*



*Above, a German MiG-29 carrying an Archer missile prepares for a training sortie. The older helmet-mounted directional system, seen on the pilot at right, is effective technology, but it is aging.*



*The AIM-9X incorporates advanced technologies. Integration with the JHMCS will maximize its high off-boresight capability. Once the system has been integrated into the F-15, it will be inserted into the F-16, the F/A-22, and possibly the F-35 Joint Strike Fighter.*



*The 422nd creates training syllabi for new systems, sets employment parameters, and tests every variable that might affect mission outcome. One weapon currently in test and evaluation at Nellis is the improved, next-generation AGM-65K Maverick missile system, featuring an up-graded TV seeker and a 298-pound blast fragmentation warhead.*



*Above and left, crews prepare A-10s. On the ramp are weapon crates for missiles carried by the A-10, which has proved to be a formidable weapon in the war in Afghanistan.*

*In January, the squadron took delivery of the first Air Combat Command F/A-22. Airmen are poring over the Raptor, learning the ins and outs of its transformational technology so they can begin the tests that will enable them to predict the performance of the aircraft under every conceivable condition. At right, a crew chief from the 57th Wing checks out the laptop that contains all of the tech orders and forms for the aircraft.*





*A 57th Wing crew chief and a pilot from the 422nd inspect F/A-22 No. 12, the first of eight Raptors that will go to the squadron for test and evaluation.*



*Above, a pilot performs a walk around to familiarize himself with the aircraft and, at right, checks out the cockpit's ultrasophisticated avionics suite, which will permit simultaneous engagement of multiple targets.*





*At right, an F-15E crew does the paperwork before a mission. The test and evaluation crews perform missions similar to what front-line crews might encounter. Every contingency is planned for, and each aircraft and system is put through its paces, so combat units won't get a nasty surprise in the heat of battle. The 422nd conducts field visits to familiarize operational units with new developments.*



*At left, the crew checks out an AGM-130. This mission will evaluate improved software in the F-15E. The AGM-130 has been used to great effect by the troops performing missions in support of Operations Northern and Southern Watch, enforcing the no-fly zones over Iraq.*

*Many of the unit's missions take place during various exercises, such as Red Flag. The test ranges at Nellis include the Tonopah Test Range, the 5,000-square-mile Nellis Range Complex, and two emergency airfields. At right, an F-15 crew readies for takeoff.*





*Above, an F-15E crew releases an AGM-130. The powered standoff weapon is designed for strikes against heavily defended targets. The missile's potency—and its deadly accuracy—has been proved time and again.*

*At right, F-16s from the 422nd form a landing pattern on their return to Nellis after a sortie, while, below, another fighter punches out flares during a mission.*



*Members of the 422nd Test and Evaluation Squadron work hard to gather knowledge, test concepts, and make sure their information gets to the front lines, where it's needed most. ■*