The Spirit of '76 Pod Newsletter

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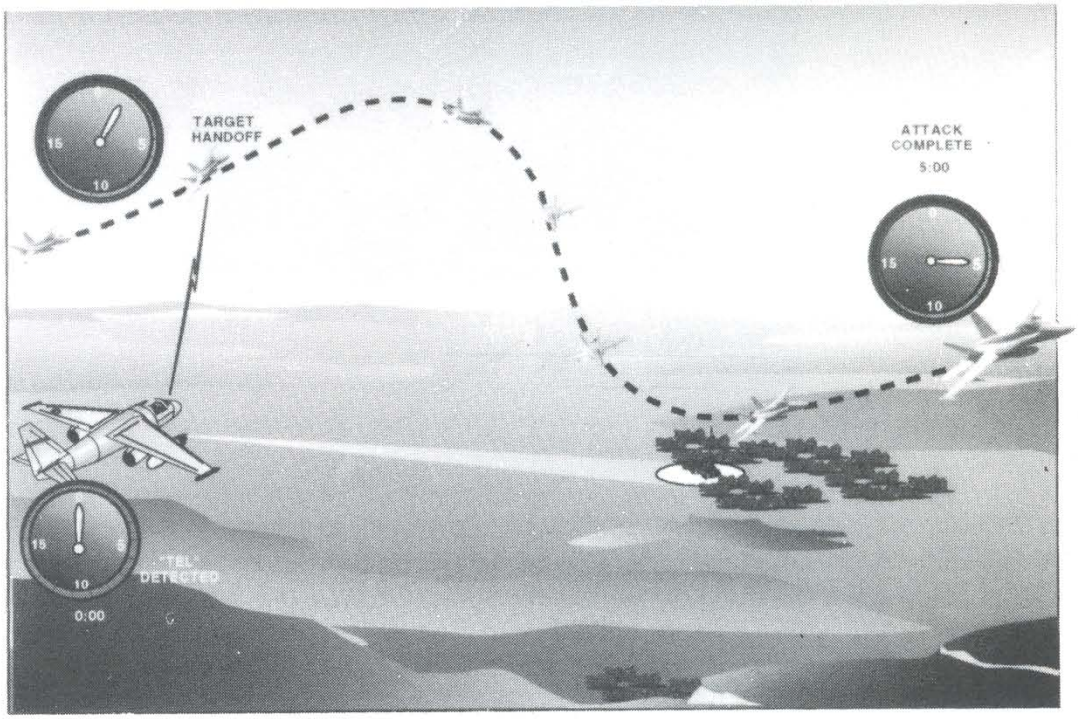
'GOTCHA': Gray Wolf and F/A-18 Score TEL Kill During ASCIET 95

Operating in its fourth major exercise in the past six months, Gray Wolf participated in Theater Missile Defense operations in Gulfport, Mississippi, on 11 and 12 September 1995 as a JTMD sponsored off-line participant in ASCIET 95. **On 12 September, Gray Wolf, employing the AN/APG-76 radar with 1-foot SAR capability, independently detected and imaged a TEL in a 25 square kilometer search area. Within three minutes of detecting the contact, Gray Wolf vectored an F-18 aircraft on top for a constructive kill, using the GPS quality target coordinates.** The previous day, Gray Wolf correctly determined the absence of the TEL when it was mistakenly assigned a 100 square kilometer search area not containing the TEL. During the exercise, Gray Wolf also demonstrated the advantages the APG-76 radar's simultaneous SAR/MTI provides, by passing not only moving target coordinates but terrain references from the radar display to the attacking F/A-18. The terrain reference information orients the attacking pilot better and allows faster ingress, thus enhancing attack effectiveness and aircraft survivability.



TEL Kill Scenario at ASCIET 95

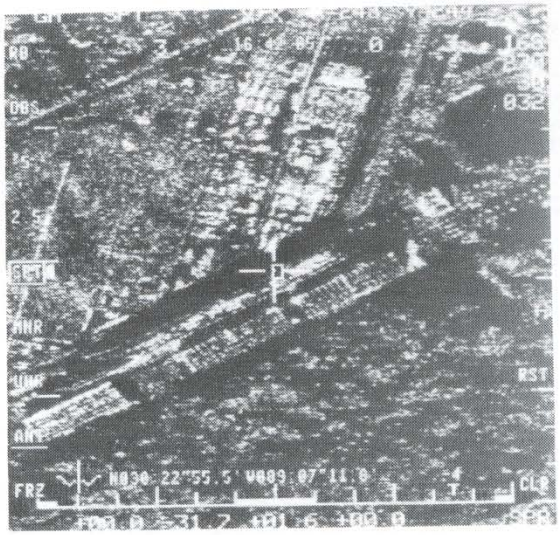
Air Force AN/APG-76 Pod Completes Initial Evaluation

The initial Air Force evaluation of the podded AN/APG-76 aboard an F-16D block 40 aircraft was successfully completed on 17 August. This effort was sponsored by Air Combat Command to "demonstrate sensor technologies that could assist in detecting, tracking, and identifying mobile missile launchers..."

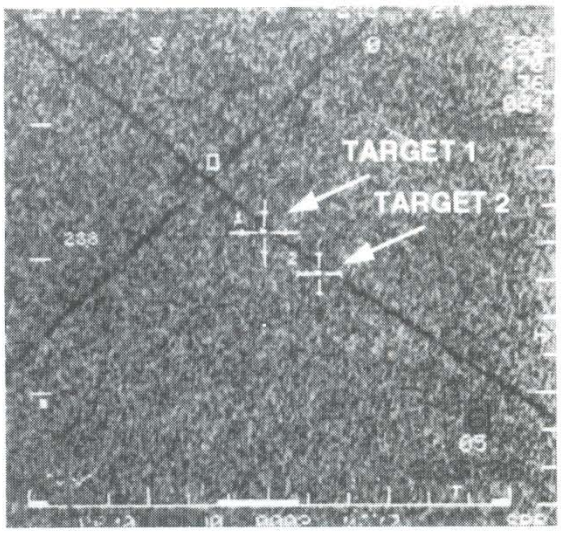
Comments from key personnel involved in the test program: "The radar outperformed all other radars for detection/tracking of stationary targets to 80 miles, moving targets out to 62 miles..." and the radar was "easy to operate..."

This effort was supported by the USAF Air Warfare Center at Eglin AFB, FL through the 79th Test & Evaluation Group for project management and flight testing, and by the 475 Weapons Evaluation Group at Tyndall AFB, FL through the 84th Test Squadron for aircraft integration support.

The test series focused on evaluation of real-time 1-foot SAR performance using military vehicles as the test targets. Detailed results from these tests may be requested by US government agencies through the 79th TEG with approval by HQ ACC/DR.



F-16 10-foot SAR Imagery



2-Track GMTT

Norden Enhances APG-76 Capabilities

Norden Generates Ground Moving Target Images and 3-D SAR Imagery

F-16 with APG-76 Pod

Norden Systems has generated images of ground moving targets using data collected at Eglin in February with the APG-76 in the Gulfstream II aircraft. Under contract to the Air Force Wright Laboratory, Norden is evaluating a Moving Target Imaging technique based upon the unique 3-port antenna design of the APG-76. Multi-polarization images are also being generated to evaluate the utility of this technique for moving target imaging. Three-dimensional (3-D) SAR images of the same targets in a stationary position have also been generated under this program. These features will ultimately be incorporated into the system to further enhance its capabilities.

Automatic Target Cueing/ Recognition (ATC/ATR)To Be Integrated with APG-76

Norden is also conducting a company-funded R&D program to further augment the APG-76 operational utility by integrating it with Automatic Target Cueing and Recognition. The immediate objective is to develop an automatic target detection and classification capability for stationary ground targets, and incorporate these capabilities into Norden's Silicon Graphics workstation-based ground station. In a related activity, a meeting was held with Sandia National Laboratory in September with Air Force participation to discuss the integration of ATC and ATR technology being developed at Sandia into the APG-76 radar.

Norden Systems Awarded MTIm Contract from Office of Naval Research

Norden Systems will be continuing the development of the MTIm (Moving Target Imaging) technology under a recently awarded contract from the Office of Naval Research. This innovative technique, initially developed under Norden IR&D, is a potential means to identify, as well as detect, slow-speed ground moving targets with MTI (Moving Target Imaging) radars like Joint STARS and the AN/APG-76. The 3-port azimuth interferometry incorporated in these radars is an essential element of the technique.

The Spirit of '76 Pod Newsletter is published by the Business Development and Advanced Programs Team of Westinghouse Norden Systems. Contact Chris Patrick at (203)852-4567 or 1-800-426-9374 for additional information.