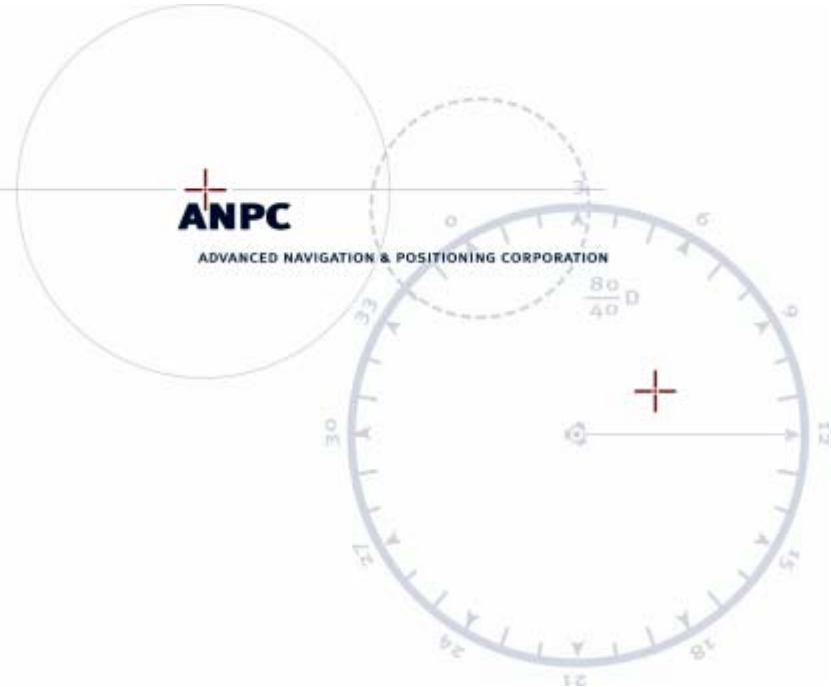

Description of
Rhino III Deployment
TO
Klamath Falls Airport

December 22, 2005

SECTION 1: INTRODUCTION

1.1 Purpose

The Transportable Transponder Landing System (model Rhino III), developed by ANPC under NAVAIR contract with the U.S. Marines, is being deployed to Klamath Falls Airport for system evaluation by the customer. The Special Transmit Authority is requested to support this activity occurring around January 24, 2006. This document elaborates on system functions relevant to the STA application.

1.2 Aircraft Surveillance

The Rhino III uses SSR frequencies to accomplish 360º surveillance around the installation. The current implementation uses a sectorized interrogator of six slightly overlapping antenna beams. One sector is interrogated at a time. The nominal PRF is 17 Hz. Mode A and Mode C interrogations are interlaced. If the processing software detects overlapping transponder replies, it will proceed with a six-level whisper/shout sequence in that sector. The whisper/shout interrogations are performed at 68 Hz. The maximum effective interrogation rate of an aircraft in the surveillance volume is 3.2 Hz. An omni-directional P2 pulse is emitted to suppress replies from the back and side lobes of the interrogator antenna.

1.3 Approach Guidance

The Rhino III can provide ILS like guidance to either the main runway or the reciprocal runway. At Klamath Falls airport, the main runway will be 32 and the reciprocal will be 14. To support this, the STA will need to include the assignment of an ILS pair. The common localizer frequency for Rhino has been 108.35, but it can be set to whatever Spectrum Management assigns.

Note: A fixed Transponder Landing System is installed at Atlantic City International Airport adjacent to an ILS, and FAA tests have declared them to be non-interfering.

1.4 Approach Interrogations

To support the precision tracks necessary for approach guidance, the effective interrogation rate in the approach sector is increased to 10 Hz. The effective rate in the each surveillance sector is then reduced to 2.8 or 2.1 Hz, depending on whether or not whisper/shout is necessary.