Independence Series | "Our Best ANR Headset" PA-1779T

We believe our PA-1779T is the quietest ANR in the marketplace. It contains more features than any other ANR marketed today. It is the only self-contained ANR aviation headset manufactured in the world. The unit contains a rechargeable NiMH battery in the ear cup providing power for the ANR function. There is no battery box or additional cords as with all other ANR headsets. Not only does our ANR work exceptionally well, the headset has an extremely good passive noise attenuation of 25 dB. The PA-1779T takes advantage of closer tolerance mil-spec components for a more stable and effective performance. The PA-1779T provides an additional 18-22 dB of active noise reduction at 100 Hz. A panel mounted version is also available. A slightly modified version of our panel mounted version has been in use on the International Space Station for over 5 years and has been certified by NASA and the U.S. Department of Defense.

We have tried to make the unit as comfortable as possible using a sheepskin head pad and Twin Layer gel silicone ear seals. The sheepskin head pad provides a comfortable, breathable head pad that will virtually eliminate hot spots. The Twin Layer gel ear seals will rest comfortably against your ears and provide more noise attenuation than any other ear seal. The PA-1779T is one of the lightest weight (14.5 oz), full muff style ANR headsets manufactured today.

Features

Passive: 25 dB
Active: Additional 20-22 dB
Auto Shut-off
Cell/Satellite phone interface
Auxiliary audio interface for music or audible
Checklists & Warnings
Totally self-contained unit
Mono/Stereo capability
Dual volume control
Twin Layer gel ear seals
Noise canceling electret microphone
Adjustable "memory" flexible microphone boom
Leatherette mic windscreen cover
Custom padded protective case
Rechargeable NiMH battery
Usage time: 45-50 hours
Weight: 14.5 ounces
Five-Year warranty
Made in USA

Additional Model: PA-1779TH(Helicopter), PA-1779T (Panel Version), PA-1779TB (with BOSE® plug)

Optional Accessories: Attachable L.E.D. Flashlight, Throat Microphone, Confor® Foam Ear Seals, Metal Headband, Cloth Ear Seal Covers, DC-to-DC Charger, 220V Wall Charger, DC-Power Box

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2.0 Fitting Your Headset

Wearing your headset properly is paramount to achieving both comfort and the best performance from your new ANR headset. The headset should be placed on your head and slowly pulled down so that each ear cup is properly positioned over each ear.

The headband can be tightened or loosened by using the hand adjustable knurled knobs on the slides of the headband so that it fits your head properly. It should apply slight pressure on your head without being snug. You may need to make your final adjustments in a high noise environment and with the ANR electronics turned on.

2.1 Enhanced Voice Intelligibility (EVI)

The Independence headset has been incorporated into its integrated circuitry a proprietary DSP circuit which enhances all audio within the speech frequencies. The result is a more intelligible incoming ATC transmission. Incoming speech frequencies are amplified 2-4 dB for more clarity and intelligibility. This is particular favorable for pilots who may have suffered some hearing loss over the years.

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3.0 Microphone Placement
Your headset comes with an adjustable "memory" flex microphone boom and a noise canceling electret microphone. The mic boom can be rotated 180 degrees for left or right side use. Proper placement of the microphone is critical in order to achieve clear communications. The microphone should be positioned at the corner of your mouth approximately ¼" away from your lips.

3.1 Volume Control (On comm-cord splitter)
The PA-1779T is fitted with two individual volume controls, one each for the right and left side of the headsets. The volume control is located on one side of the triangular splitter on the comm-cord. The other side contains the mono/selector switch. When adjusting the volume control the pilot-in-command should adjust their volume control first with the audio system turned on and the ANR system turned off. Then turn the ANR back on and adjust the individual sides of the headset.

3.2 Mono/Stereo Selector (On comm-cord splitter)
Your headset comes standard with a Mono/Stereo selector switch which is located on one side of the triangular splitter. "M" indicates the mono position while "S" indicates the stereo position. The volume control is on the reverse side. It should be noted that if you are using a monaural intercom and your headset is set in the stereo, position, you will only hear through one speaker of your headset. With a stereo intercom, you will hear true stereo in both ears.

3.3 LED Light on Ear Cup (On left shoulder of boom side ear cup)
If illuminated, the light indicates the ANR system is activated.

3.4 Microphone, Audio & Charging Jack (On boom side ear cup)
There are two jacks on the boom side ear cup. The smaller looking of the two jacks is for the microphone plug, or can be used for the wall charger. The larger looking jack which is directly beneath the smaller jack is used for cell phone or auxiliary audio/audible checklist for the cell phone

3.5 Rechargeable NiMH Battery, Power Jack and Wall Charger
Your PA-1779T ANR headset has a rechargeable nickel metal hydride battery pack installed inside the ear cup. This type of battery has no "memory effect" as with other rechargeable batteries such as NiCad. There are two 3.5mm jacks for charging the battery. They are located on each ear cup directly below the overhead cord where it enters the cup. These jacks serve a dual purpose and can also be used to plug in the microphone plug. A wall charger is provided that is 110V for

3.6 Modular Flexible Design – Comm-cord, Microphone Boom, LED Flashlight
The PA-1779T's modularity includes some unique features. We have designed the headset to be modular with the introduction of a detachable comm-cord, and microphone boom. In addition we've designed an integrated LED flashlight that will attach to the headset. This modularity makes the headset "field repairable". Pilots can use the headset with or without comm-cord when they are doing their preflight check. They can have different comm-cords for different uses (helicopter or with 2-way radios) simply by purchasing the appropriate comm-cord. Industrial users can wear a modified version with or without a microphone and protect their hearing as well as have the flexibility to walk around without worrying about a power source. The user can adjust the microphone boom from left to right by plugging into the 3.5mm jack (small washer) on either side of the left or right ear cup. The larger jack(large washer), located under the smaller jack on the boom side of the headset, is reserved for plugging in your cell phone or music input source (IPOD®, MP3®, or CD player).

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The microphone boom can be totally removed by fully extending the headband to its largest size so approximately only ¾" of the headband is passing through the rubber bushing located in the center of the ear cup. Then grasp the tip of the headband and slowly pull/twist the headband through the rubber bushing. To reattach, line up the molded rubber pieces and headband and snap the rubber molded piece back onto the pivot.

As an accessory, we've made an attachable LED flashlight that snaps onto the ear cup the same way as the microphone boom. This light is fixed on a flexible boom and can be easily adjusted for illuminating documents in the cockpit. Once adjusted the flashlight will be hands free. There is a small On/Off button to turn the light on and off. The power is provided by a small watch battery.

4.0 Auto Shut-Off Circuitry

Your new PA-1779T comes equipped with our new Auto Shut-Off proprietary circuitry. The ANR will shut-off automatically when the unit is unplugged from the aircraft or the master avionics switch is turned off. This will conserve your battery's life. The headset will automatically turn on when the unit is plugged into a live intercom system with the white On/Off button in the "On" position. Should you want to turn off the headset while you are using the unit in an aircraft, simply press the white On/Off button.

If you would like to bypass the Auto Shut-Off feature and use the headset as ANR hearing protector, there is an accessory available (ANR/Cell Phone Energizer Plug) and can be purchased direct from PILOT USA on 1-800-731-0790. Call for details.

4.1 Testing Your ANR System

In order to test your ANR headset, it must be plugged into the aircraft with a live intercom with the white On/Off button in the "On" position. The LED light will become illuminated when the ANR system is on. This will let you properly test all functions of the ANR system. If you are not plugged into a live intercom or the white On/Off button is in the "Off" position, the ANR system will not be activated but the headset will work as a passive headset.

4.2 Cell/Satellite Phone Capability

Located on the boom side ear cup, there are two 3.5mm jacks. The upper jack is used for the microphone cord and can also be used for charging the headset. The lower jack, which has a larger nut around the jack, is for cell phone or audio input. The headset comes with two cables marked "PHONE" and "AUDIO". The right angle (90º) plug on both cables **should always plug** into the headset. The straight plug will plug directly into your cell phone or audio input source.

4.3 Sheepskin Head Pad

The headset is fitted with a breathable sheepskin head pad which is attached to the headband with a Velcro® closure. This head pad virtually eliminates all complaints of hot spots caused by non-breathable synthetic head pads used by other manufacturers. The natural head pad combined with the single suspension of the headband assures as a comfortable fit.

4.4 Twin Layer Gel Ear Seals

Your headset is fitted with our proprietary twin layer silicone ear seals. The new design eliminates 30% of the weight of normal silicone ear seals and provides superior noise attenuation.

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5.0 Taking Care of Your Headset

Treat your headset like you would treat your stereo and computer at home. To insure the full life of your headset. keep it clean and free of dirt and you will extend the headset's life giving you many years of flying pleasure.

Clean your headsets with non-alcohol wipes or a soft slightly cloth dampened with water and a mild soap. *Never use alcohol*. Plastic parts dry out or fray when exposed to alcohol based products. Headband, ear cups, ear seals and cords can be lightly cleaned but one should be careful around the microphone and speakers on the headset.

5.1 Custom Padded Carrying Case

A padded case is provided with your PA-1779T. The case will protect your headset when stored properly and provides a central place to keep your wall charger, comm-cord, cell phone and auxiliary audio cord.

5.2 Mic Windscreen

Pilot USA recommends periodically replacing the microphone windscreen if necessary. The foam microphone windscreen helps eliminates the popping "P"s and "T"s and annoying breath puffs when you're communicating with the headset. The foam microphone windscreen also helps protect the microphone from moisture and other elements that may cause damage to the electronics. You may use mild soap and water to clean your foam windscreen. Place the foam windscreen in mild soapy water. Rinse and make sure the windscreen is fully air dried before reattaching to the microphone.

5.3 Ear Cushions

Ear seals also need periodic replacing. Depending on how much you fly, temperature (extreme heat or cold) also influences the life span of your ear seals. We have several types of ear seals on our headsets. Generally, PVC, foam and silicone gel style ear seals can be wiped off with mild soap and water. **Do not submerge the ear seals in water.** All three types of our ear seals have vent holes and water would enter the ear seal's vent holes ruining the ear seal.

5.4 Communication Cord

Take care of your communication cord. Wires in the cord can break if abused. Always disconnect them by disconnecting the plugs, not by pulling the cords. Pulling on the cord, instead of the plugs is a major cause of headset repairs – it causes wire breaks and static. We recommend storing your headset in a headset case or flight bag and keeping the cords free of obstruction to reduce wear and tear on your headset.

6.0 Technical Specifications

6.1 Microphone:

Generating Element: Condenser – Noise Canceling
Polar Pattern: Bi-directional
Frequency Response: 150 – 4000 Hz
Impedance: 50 ohms @ 16VDC
Sensitivity: 100 dB @ 1mW input
Power Requirements: 8 - 16VDC
Current Drain: 8 mA at 8 VDC
Color/Case Materials: Black ABS
Weight: 6 grams
Mating Connector: U-173/U

6.2 Transducers:

Audio Speaker Impedance: 300 Ohm
Military: 19 Ohm
Nominal Power: 100 mW
Max Power: 200 mW
SPL: 106 + 2dB at 1 KHz
Effective Frequency Range: 200 Hz – 20,000 Hz
Effective DNC Frequency Range: 30 Hz - 8000 Hz
Active Noise Reduction: 20 - 22 dB at 100 Hz
Maximum Ambient Noise Level: 120 dB SPL

6.3 Enhanced Voice Intelligibility (EVI) Circuit:

2-4 dB Gain at 500 - 1000 Hz when DNC is ON
Signal Noise Ratio: Less than 58 dB

6.4 Nickel Metal Hydride Battery:

8.4V 720 mAH
Battery Charger: 110V Input 10.15 VDC 90mA
220V Input 10.15 VDC 90mA
Charge Time: @12-16 Hours
Usage Time: @45 – 50 hours continuous usage depending on noise level
Battery Life: @1000 charges or @5000 hours total usage

Auto Shut-Off Timer: Between 15 & 30 seconds Auto Shut-off will take place and the LED light will dim as power to the ANR System is turned off.