

# Telex

---

## Operating Instructions

FC  
CE



**Airman 850**

**TELEX**<sup>®</sup>

## General Description

The Telex Airman 850 is designed for use in aircraft with low noise levels. Ambient noise levels in such aircraft cockpits may be considered harmful when exposed to for long periods of time. In addition, these ambient noise levels require pilots to increase communications volume level for clear understandable communications. This increased communications level adds to the harmful and fatiguing aircraft cockpit environment.

The Telex Airman 850 is ideally suited to this environment. Soft, pliable cushions provide passive attenuation of unwanted background noise. The advanced active noise reduction system removes even more noise in the communications frequency range. This combination gives the Telex Airman 850 a unique improvement in communications clarity and intelligibility. With ambient noise reduced, communications levels can also be reduced, providing less fatigue and an overall improvement in comfort.

Complimenting these noise reduction features is a durable, lightweight design with adjustable sliders increasing long-term fit and comfort. A new boom mounted microphone utilizes an electret noise-canceling element for improved noise rejection. Extended response drivers improve sound reproduction. The result is a comfortable, lightweight, headset that provides the ultimate in clear, understandable communications with no batteries or complicated controls to get in the way.

The Telex Airman 850 headset with boom microphone is approved for aircraft use under FAA TSO's C57a and C58a.

The conditions and tests required for the TSO approval of this article are minimum performance standards. It is the responsibility of those installing this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards. TSO articles may have separate approval for installation on aircraft. The article may be installed only if performed under 14 CFR part 43 or the applicable airworthiness requirements.

This device complies with part 15 of the FCC Rules, Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



# FAA Technical Standard Order

The Telex Airman 850 headset including boom microphone is FAA TSO C57a and C58a approved. Tests were conducted using RTCA DO-214 and RTCA DO-160D. The headset was designed and is manufactured to meet the following environmental categories.

CONDITIONS	DO-160D SECTION #	DESCRIPTION OF TESTS CONDUCTED
TEMPERATURE AND ALTITUDE LOW TEMPERATURE HIGH TEMPERATURE LOSS OF COOLING ALTITUDE DECOMPRESSION OVERPRESSURE	4.0  4.5.1 4.5.2 & 4.5.3 4.5.4 4.6.1 4.6.2 4.6.3	EQUIPMENT TESTED TO CATEGORIES A1, B1, AND C1   NO TEST REQUIRED
TEMPERATURE VARIATION	5	EQUIPMENT TESTED TO CATEGORY B
HUMIDITY	6	EQUIPMENT TESTED TO CATEGORY A
OPERATIONAL SHOCK AND CRASH SAFETY	7	NO TEST REQUIRED
VIBRATION	8	EQUIPMENT TESTED TO TYPE 2, CATEGORY S, ZONE 2, CURVE B
EXPLOSION	9	NO TEST REQUIRED
WATERPROOFNESS	10	NO TEST REQUIRED
FLUIDS SUSCEPTIBILITY	11	NO TEST REQUIRED
SAND AND DUST	12	NO TEST REQUIRED
FUNGUS	13	NO TEST REQUIRED
SALT SPRAY	14	NO TEST REQUIRED
MAGNETIC EFFECTS	15	EQUIPMENT TESTED TO CATEGORY Z
POWER INPUT	16	NO TEST REQUIRED
VOLTAGE SPIKE	17	EQUIPMENT TESTED TO CATEGORY A
AUDIO FREQUENCY SUSCEPTIBILITY	18	NO TEST REQUIRED
INDUCED SIGNAL SUSCEPTIBILITY	19	EQUIPMENT TESTED TO CATEGORY A
RADIO FREQUENCY SUSCEPTIBILITY	20	EQUIPMENT TESTED TO CATEGORY S
RADIO FREQUENCY EMISSION	21	EQUIPMENT TESTED TO CATEGORY B
LIGHTNING INDUCED TRANSIENT SUSCEPTIBILITY	22	NO TEST REQUIRED
LIGHTING DIRECT EFFECTS	23	NO TEST REQUIRED
ICING	24	NO TEST REQUIRED
ELECTROSTATIC DISCHARGE	25	NO TEST REQUIRED



**Figure 1**  
**Airman 850 Reference View**  
**(Dual-Sided Model Shown)**

Note: See Page 8 for Available Replacement Parts

## **Design Features (See Figure 1)**

### **Fit and Comfort**

An adjustable headband gives the wearer two inches (51mm) of up and down earphone adjustment per side, while the gimbal mounting improves the headset's side-to-side comfort.

### **Boom Microphone**

The Airman 850 features a miniature, amplified, noise canceling electret microphone that provides superior 400 Hz hum rejection. The microphone is mounted on a flexible gooseneck boom that permits precise microphone placement. The boom rotates 320° to allow the microphone to be worn on either side of the head. For best results, the microphone should be placed as close to the mouth as possible. The microphone includes a replaceable windscreen to minimize popping, hissing, and breathing sounds when speaking.

### **Controls**

The Airman 850 contains an On/Off switch to control ANR power and a Hi/Low switch for controlling receiver volume.

### **Cordage and Plugs**

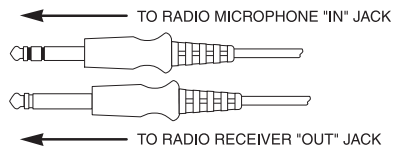
The microphone cordage is protected inside the boom. A strain relief on the cord provides maximum durability. Shielded wire throughout the headset protects against RFI (Radio Frequency Interference) and EMI (Electro Magnetic Interference).

# Headset Operation

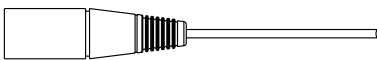
1. Connect the headset as shown in Figure 2.
2. Rotate the entire boom overhead to wear the microphone on either the right or left side of the head (Note the two stops below the boom housing).
3. With the Airman 850 resting securely on top of the head, check that the earphone housings are centered over the ears. Maximum performance depends on the proper fit of the headset.
4. For best noise cancellation, position the microphone as close to the mouth as possible and speak in a normal voice.
5. To activate the Active Noise Reduction feature, move the "On/Off" switch to the "On" position (See Figure 3). The active noise reduction feature of this headset uses power obtained from the aircraft through the boom microphone connection. Active noise reduction will only function when power is received from the microphone connection. There are many different communications systems in use today and most systems can be configured for this type of use. Each system can be configured differently. When determining proper system configuration, select an operational mode that provides constant power to the boom microphone. If in doubt consult the avionics equipment manufacturer or qualified avionics technician.

When conditions allow for boom microphone power only during push-to-talk, it may be preferred to keep the ANR power switch in the "off" position.

6. When required, the user may increase headphone volume level by moving the volume "HI/LOW" switch to the "HI" position (See figure 3). The "low" position is considered normal. The Airman 850 should function properly with most avionics equipment when used in the "low" position.



*Connectors used on 301317-000 and 301317-300*

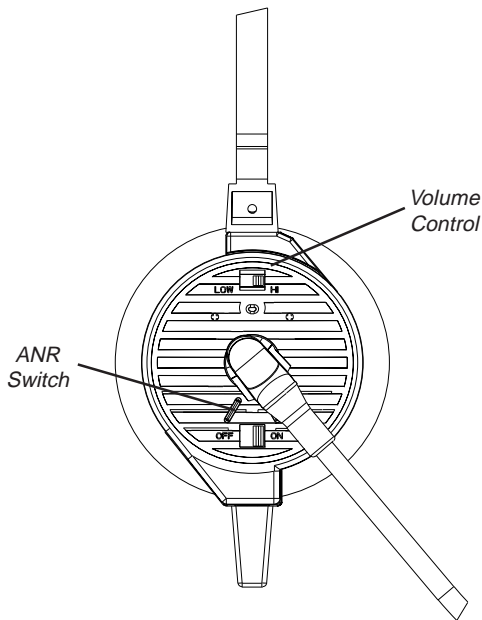


*Connector used on  
301317-002*



*Connector used on  
301317-001*

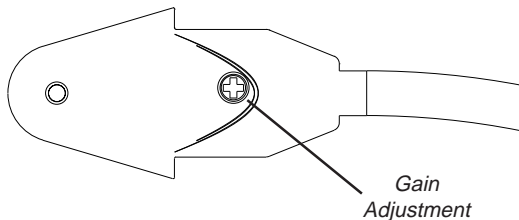
**Figure 2**  
*Headset Connections*



**Figure 3**  
Volume Adjustment/ANR Switch

## Microphone Gain Adjustment

The microphone gain has been factory-adjusted to the nominal level required for normal radio operation. Under normal circumstances microphone gain does not require adjustment. If needed, adjustment by a qualified avionics technician is recommended. To access the microphone gain, insert a 1.5mm flat head screwdriver through the access hole in the microphone housing (See Figure 4). Clockwise rotation increases the microphone gain.



**Note:** There is a hole on both sides of the microphone housing. One is blocked by foam. Do not use the side blocked by foam.

**Figure 4**  
Microphone Gain Adjustment

# Specifications

## Receivers:

Type: Dynamic

Impedance:

301317-000, 301317-001: 150 ohms +/-20% @ 1kHz

301317-002: 600 ohms +/-20% @ 1kHz

301317-300: 300 ohms +/-20% @ 1kHz

*Note - Damage could occur to avionics equipment by the use of this headset if the equipment was manufactured for use with 600 ohm headsets only. If in doubt, consult the avionics equipment manufacturer.*

Frequency Response: 350 Hz - 3 kHz

Sensitivity: Volume selector in "Low" 90 dB +/- 5dB (1 kHz, 1 mW input)

## Microphone and Amplifier:

Element Type: Noise-canceling amplified electret

Matching Impedance: 50-600 ohms

Frequency Response: 300 Hz - 6000 Hz (Per RTCA DO-214)

Sensitivity: 400mV +/-6dB (at 1kHz, 12VDC, 470 ohm DC/150 ohm AC load)

Operating Voltage: 8-28 Vdc (470 ohm load)

## ANR:

Receives power from boom microphone connection.

Provides up to 12dB of attenuation between 100 and 2000 Hz.

## Plug Type (301317-000, 301317-300):

Microphone Plug: PJ-068 or equivalent

Receiver Plug: PJ-055 or equivalent

## Plug Type (301317-001):

Microphone Plug: Single PJ-068

## Plug Type (301317-002):

Microphone Plug: Single XLR Connector

Receiver Plug: 5-Contact Male

## Gross Weight:

3.8 oz. (107.7 g) without cord (dual-sided models)

2.85 oz. (80.7 g) without cord (single-sided models)

## Cord Length (301317-000, 301317-001, 301317-300):

5.5 ft +/-0.5 ft (1.7 m +/- 0.15 m)

## Cord Length (301317-002):

6.5 ft +/-0.5 ft (1.9 m +/- 0.15 m)

## Color:

Black

## Controls:

Active Noise Reduction "On/Off" Switch

Volume "Hi/Low" Switch



## Part Number Information

Airman 850 Headset .....	Catalog no. 301317-000
Airman 850 Headset w/Single PJ-068 .....	Catalog no. 301317-001
Airman 850 Headset w/XLR Connector .....	Catalog no. 301317-002
Airman 850 Headset Single-Sided .....	Catalog no. 301317-300
Replacement Ear Cushions .....	Catalog no. 800456-020
Replacement Windscreen .....	Catalog no. 800456-019
Replacement Clothing Clip .....	Catalog no. 590637-000

For a Dealer Near You,  
Telephone: 877-863-4168  
Website: [www.telex.com/aircraft](http://www.telex.com/aircraft)

## LIMITED WARRANTY — VALID ONLY IN UNITED STATES AND CANADA

TELEX Communications, Inc. ("Telex") warrants to the user, who originally purchased the product delivered with this card, that the product will be free from defects in material and workmanship for the following periods after such date of purchase: Material 36 months, workmanship 36 months. Telex will, at its option, repair or replace, free of charge, such defective products subject to the following conditions:

1. Delivery of the product or parts postage prepaid to the Telex dealer, authorized service facility or factory.
2. Determination by Telex that a defect exists and is covered by the limited warranty. Defects due to alteration, repair by an unauthorized person, insertion of non-Telex parts, misuse, accidental damage, use of the equipment for purposes other than those for which it was designed, and the like, are not covered by this limited warranty and repairs thereof will be subject to normal service charges.
3. Repairs and replacement parts are covered under this limited warranty only for the unexpired term of the original limited warranty.
4. Products purchased from unauthorized dealers are not warranted.
5. You must fill out and return the attached registration card within 10 days after such purchase or this limited warranty is void.

THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHICH EXTENDS BEYOND THE TERM HEREOF. THE REMEDIES PROVIDED BY THIS LIMITED WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON. NO PERSON HAS ANY AUTHORITY TO BIND TELEX TO ANY REPRESENTATION OR WARRANTY OTHER THAN THOSE PROVIDED BY THIS LIMITED WARRANTY. TELEX SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY FAILURE OR OTHERWISE OF THE PRODUCT.

Some states do not allow exclusions or limitations of incidental or consequential damages or limitations on how long an implied warranty lasts, so the limitations or exclusions herein may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**CUSTOMER SERVICE**

For information or technical assistance, call or write to Telex at:

Customer Service Department  
 Telex Communications, Inc.  
 12000 Portland Ave. So.  
 Burnsville, MN 55337 U.S.A.  
 (952) 884-4051 or (877) 863-4168

When returning equipment for repair, please enclose an explanation of the problem. If the equipment is covered under warranty, please enclose a copy of your proof of purchase. The equipment must be accompanied by documentation stating your name, return address, and telephone number.

Return equipment for factory repair to:

Customer Service Department  
 Telex Communications, Inc.  
 1720 East 14th St.  
 Glencoe, MN 55336 U.S.A.  
 (320) 864-3177 or (800) 218-2410

**Warranty Repairs** - If in warranty, no charge will be made for the repairs. Equipment being returned for warranty repair must be sent prepaid and will be returned prepaid.

**Non-Warranty Repairs** - Equipment that is not under warranty must be sent prepaid to Telex. If requested, an estimate of repair costs will be issued prior to service. Once your approval for repair, and repair of equipment is completed, the equipment will be returned on a collect basis. Collect charges may be avoided by sending a signed check for payment in full along with your signed estimate approval form (the estimate includes the shipping charge).

	Telex Warranty Term Lengths					
	1 Month	3 Months	12 Months	24 Months	36 Months	Other
<b>AVIATION</b>						
Aviation: Airman 850					X	
<i>Note: Subject to change without notice.</i>						

---

**TELEX<sup>®</sup>**

---

TELEX COMMUNICATIONS, INC. • 12000 Portland Ave. S., Burnsville, MN 55337 U.S.A.  
Telephone: 877-863-4168

Website: [www.telex.com/aircraft](http://www.telex.com/aircraft)