



ALTIMETERS

The altimeter is an instrument which indicates the altitude at which an airplane is flying. It consists of an airtight, cylindrical case which houses the activating mechanism, a graduated dial, a pointer or pointers and, usually, a barometric scale.

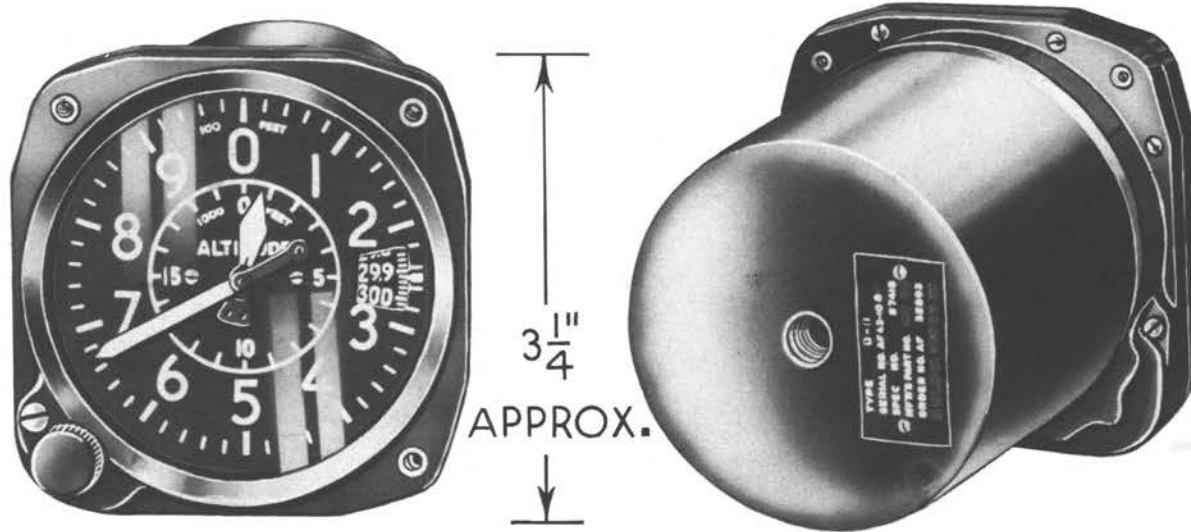
It is an absolute pressure measuring instrument which operates upon the same principle as that of the aneroid barometer. The heart of the mechanism is a sensitive metal diaphragm, from which the air has, to a large extent, been evacuated. As the altitude changes, the atmospheric pressure changes proportionately. Atmospheric pressure from the static side of the airspeed pitot-static tube surrounds the diaphragm, and changes in this pressure cause the diaphragm to contract or expand. This contraction or expansion is compensated for temperature changes, and is translated into feet of altitude upon the dial of the altimeter.

The diaphragm is so constructed that the altitude reading at sea level and standard atmospheric pressure is zero. When the field elevation is not sea level and the barometric pressure for the field is not standard, these factors may be compensated for through a zero setting knob, which moves the dial or barometric scale to correspond to existing conditions. This correction is necessary, in order to obtain a true altitude indication for the airplane, and to permit the pointers to return to zero upon landing.

The two general classifications of altimeters are the standard and the sensitive. The standard altimeter has a single pointer which makes one or two revolutions for the full range of the instrument. The sensitive altimeter has two or three pointers. When there are two, one indicates hundreds of feet and the other thousands of feet per revolution. When a third is employed, it indicates tens of thousands of feet.



ALTIMETERS INSTRUMENTS—FLIGHT



ALTIMETER—PRESSURE

ARMY TYPE B-11

NAMES: Pressure altimeter
Altimeter assembly

Sensitive altimeter

DESCRIPTION: The Army type B-11 sensitive altimeter has two pointers for indicating altitude. It also has a barometric scale which indicates atmospheric pressure in inches of mercury. This scale is visible through a window in the face of the dial.

CHARACTERISTICS:

Range.....	0 to 20,000 feet
Dial.....	2 3/4 inches diameter
Dimensions.....	approximately 3 1/4 by 3 1/4 by 4 1/4 inches
Weight.....	approximately 1 1/2 pounds
Markings: Principal.....	radioactive fluorescent material
Minor.....	fluorescent material
Connection.....	1/8 internal pipe thread

MANUFACTURER: Bulova Watch Co.

ARMY

A. E. REFERENCE NUMBER: 60-250

SPECIFICATIONS:

General.....	94-27409
Detail.....	94-27418
Superseded.....	27418

MANUFACTURER'S PART AND DRAWING NUMBER: Bulova 176-B-11

TYPE DESIGNATION: B-11

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

NAVY

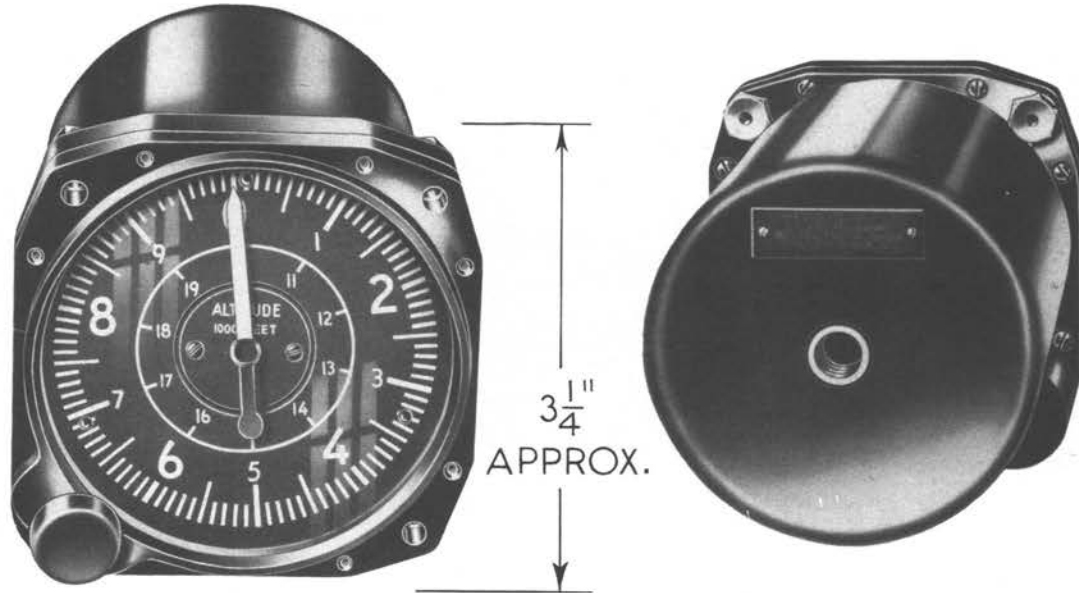
There is no Navy equivalent for this item.

BRITISH

REFERENCE NUMBER: 106A/1348

TYPE INTERCHANGEABILITY

A.A.F. Type		A.A.F. Type	
B-12	Range, 0-20,000	AN5760-3	Range, 0-35,000; fluorescent markings only
C-11	Range, 0-35,000	AN5760-4	Range, 0-50,000; fluorescent markings only
AN5760-1	Range, 0-35,000	AN5761-1	Range, 0-35,000
AN5760-2	Range, 0-50,000		



ALTIMETER—PRESSURE

ARMY TYPE B-12

NAMES: Pressure altimeter
Altimeter assembly

DESCRIPTION: The B-12 non-sensitive altimeter has one pointer. This pointer reads in thousands of feet, and makes two complete revolutions for its range of 20,000 feet. It does not have a barometric scale, but a knob is provided with which to revolve the dial, so that the pointer may be set to zero at any existing atmospheric pressure between 28 and 30 inches of mercury.

CHARACTERISTICS:

Dimensions.....	approximately 3 1/4 by 3 1/4 by 4 1/4 inches
Weight.....	approximately 1 pound
Range.....	0 to 20,000 feet
Dial size.....	2 3/4 inches diameter
Connections.....	1/8 inch internal pipe thread
Markings: Principal.....	fluorescent—radioactive material
Minor.....	white paint

MANUFACTURER: United States Gauge Company

ARMY

A. E. REFERENCE NUMBER: 60-300

SPECIFICATIONS:

Detail.....	94-27382
Superseded.....	27382

MANUFACTURER'S DRAWING NUMBER: AW-2 3/4-32J

TYPE DESIGNATION: B-12

A. S. C. STOCK NUMBER: 6000011165

TECHNICAL ORDER NUMBER: 05-30-6

PRODUCTION STATUS: Under procurement.

Shipped as a complete unit.

NAVY

There is no Navy equivalent for this item.

TYPE INTERCHANGEABILITY

Army Type	
AN5761-1	Range, 0-35,000
C-12	Range, 0-50,000
C-13	Range, 0-35,000



ALTIMETERS INSTRUMENTS — FLIGHT



ALTIMETER—PRESSURE

ARMY TYPE C-11

NAMES: Pressure altimeter
Altimeter assembly

Sensitive altimeter

DESCRIPTION: The Army type C-11 sensitive altimeter has three pointers, so that altitude may be accurately indicated. It has a barometric scale which indicates atmospheric pressure in inches of mercury, and altitude setting (reference) markers, which are set by a knob at the lower left-hand corner of the case.

CHARACTERISTICS:

- Range..... 0 to 35,000 feet
- Dial size..... 2 3/4 inches diameter
- Dimensions..... approximately 3 1/4 by 3 1/4 by 4 1/4 inches
- Weight..... approximately 1 1/2 pounds
- Lighting..... individual; 1 wire, 3 volt lamp
- Markings..... radioactive material
- Connection..... 1/8 inch internal pipe thread, with type 811 fittings installed

ARMY

A. E. REFERENCE NUMBER: 60-400

SPECIFICATIONS:

- General..... 94-27714
- Detail..... 94-27857
- Superseded..... 27857

TYPE DESIGNATION: C-11

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation.

SHIPPING DATA: Shipped as a complete unit.

NAVY

There is no Navy equivalent for this item.

MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part and Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Kollsman Instrument Division	371S-03	A-B	6000015000	05-30-1	106A/435
	371S-01	C			



ALTIMETERS INSTRUMENTS — FLIGHT



ALTIMETER—PRESSURE

AN5760-2 FORMER ARMY TYPE C-12 F.S.S.C. NUMBER 88-A-350

NAMES: Pressure altimeter
Altimeter assembly

Sensitive altimeter

DESCRIPTION: The AN5760-2 sensitive altimeter has three pointers so that altitude in feet may be accurately indicated. It also has a barometric scale, which indicates atmospheric pressure in inches of mercury, and altitude setting (reference) markers, which are operated by a knob located at the lower left-hand corner of the case.

CHARACTERISTICS:

- Dimensions..... approximately 3 1/4 by 3 1/4 by 4 1/4 inches
- Weight..... approximately 1 1/2 pounds
- Range..... 0 to 50,000 feet
- Dial..... 2 3/4 inches diameter
- Markings: Principal..... fluorescent—radioactive material
- Minor..... fluorescent material
- Connections..... 1/8 inch internal pipe thread

ARMY

A. E. REFERENCE NUMBER: '60-600
 SPECIFICATIONS:
 Detail..... AN-GG-A-461
 Superseded..... 94-27957-A
 AN DRAWING NUMBER: AN5760
 AN PART NUMBER: AN5760-2
 TYPE DESIGNATION: Former type C-12.
 A. S. C. STOCK NUMBER: Refer to chart.
 TECHNICAL ORDER NUMBER: Refer to chart.
 PRODUCTION STATUS: Under procurement.
 SHIPPING DATA: Shipped as a complete unit.

NAVY

SPECIFICATIONS:
 Detail..... AN-GG-A-461
 Superseded..... SQ-81A
 AN OR N. A. F. DRAWING NUMBER:
 AN5760
 AN PART NUMBER: AN5760-2
 F. S. S. C. STOCK NUMBER: 88-A-350
 PROCUREMENT STATUS: Standard—
 G. F. E.—Order through A. S. O. by
 F. S. S. C. number.

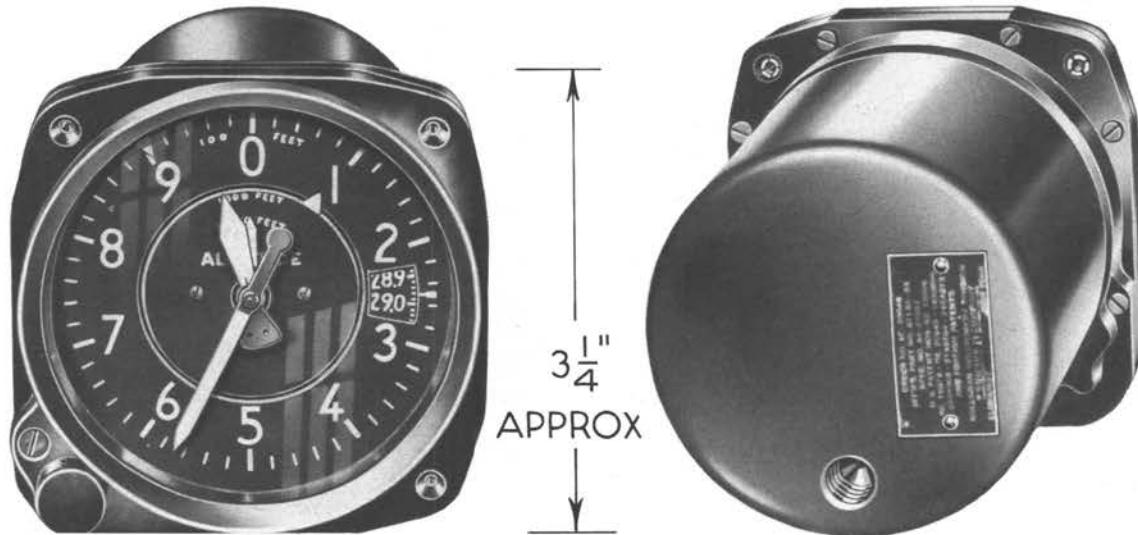
ALL MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Kollsman Instrument Division	671K-03	A-B	6000015265	05-30-5	106A/837
	671BK-03	A-B	6000015262	05-30-5	106A/837
	671CK-010	N			
	744KN-02	N			
	744BKN-02	N			
	671K-01	A-C	6000015260		
	671BK-01	C			
C. G. Conn, Ltd.	8000	A-B			106A/837

TYPE INTERCHANGEABILITY

A. A. F. Type
AN5760-4

Range, 0-50,000. Fluorescent marking only.



ALTIMETER—PRESSURE

AN5760-1 FORMER ARMY TYPE C-13

NAMES: Pressure altimeter Sensitive altimeter
Altimeter assembly

DESCRIPTION: The AN5760-1 sensitive altimeter has three pointers, so that altitude in feet may be accurately indicated. It also has a barometric scale which indicates atmospheric pressure in inches of mercury, and altitude setting (reference) markers which are operated by a knob located at the lower left-hand corner of the case.

CHARACTERISTICS:

- Range..... 0 to 35,000 feet
- Dial size..... 2 3/4 inches diameter
- Dimensions..... approximately 3 1/4 by 3 1/4 by 4 1/4 inches
- Markings: Principal..... radioactive—fluorescent material
- Minor..... fluorescent material
- Weight..... approximately 1 1/2 pounds
- Connection..... 1/8 internal pipe thread

ARMY

A. E. REFERENCE NUMBER: 60-800

SPECIFICATIONS:

- Detail..... AN-GG-A-461
- Superseded..... 94-27958

AN DRAWING NUMBER: AN5760

AN PART NUMBER: AN5760-1

TYPE DESIGNATION: Former type C-13

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

NAVY

There is no Navy equivalent for this item.

MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Kollsman Instrument Division	371K-05	A-B	6000015290	05-30-5 05-30-1	106A/567
	371K-01	C	6000008977		

TYPE INTERCHANGEABILITY

- Type AN5761-1 Range, 0-35,000
- AN5760-2 Range, 0-50,000
- C-11 Range, 0-35,000



ALTIMETER—PRESSURE

(Continued from page 153)

NAVY

SPECIFICATIONS:

Detail.....AN-A-2

Superseded: SQ-81-A

AN DRAWING NUMBER: AN5761 (supersedes Bureau of Aeronautics 842-SK)

AN PART NUMBER: AN5761-1

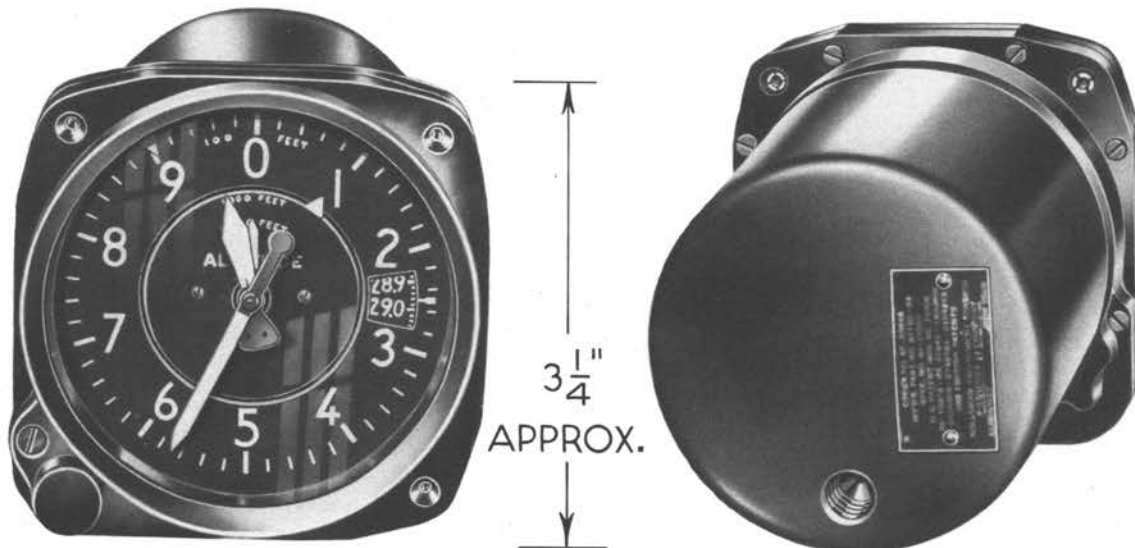
F. S. S. C. NUMBER: 88-A-340

PROCUREMENT STATUS: Standard—G. F. E.—Order through A. S. O. by F. S. S. C. number.

ALL MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part and Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Pioneer Instrument Division	1554-2J-A	A-B	6000015310	05-30-4	106A/1105
	1537-2D-A1	N			
	1537-2F-B1	N			
	1556-2K-A	N			
	1537-2B-A	N			
	1537-2D-A	N			
	1537-2F-A	N			
	1537-2F-B	N			
	1537-2K-A	N			
	1555-2L-A	C			
	1555-2M-A	C			
	1582-2M-A	C			
	1555-2J-A	A	6000015315	05-30-4	
	1555-2J-B	A			
Kollsman Instrument Division	544KN-02	N			
	544KN-04	N			
	544KN-05	N			
	544KN-06	C			
	544KN-07	C			

TYPE INTERCHANGEABILITY
A. A. F. Type
C-12 Range, 0-50,000
C-13 Range, 0-35,000



ALTIMETER—PRESSURE

AN5760-4 FORMER ARMY TYPE C-16 F.S.S.C. NUMBER 88-A-351

NAMES: Pressure altimeter
 Altimeter assembly

Sensitive altimeter

DESCRIPTION: The AN5760-4 sensitive altimeter has three pointers. It has a barometric scale which indicates atmospheric pressure in inches of mercury, and altitude setting (reference) markers which indicate altitude in feet. The pressure scale and reference markers are adjusted by a knob located at the lower left-hand corner of the case. The dial has fluorescent markings only, and it is intended for installation in night fighters.

CHARACTERISTICS:

- Dimensions..... approximately 3 1/4 by 3 1/4 by 4 1/4 inches
- Weight..... approximately 1 1/2 pounds
- Range..... 0 to 50,000 feet
- Dial size..... 2 3/4 inches diameter
- Markings..... fluorescent material
- Connections..... 1/8 inch internal pipe thread

ARMY

A. E. REFERENCE NUMBER: 60-1050
 SPECIFICATIONS:
 Detail..... AN-GG-A 461
 Superseded..... 94-27386
 AN DRAWING NUMBER: AN5760
 AN PART NUMBER: AN5760-4
 TYPE DESIGNATION: Former type C-16
 A. S. C. STOCK NUMBER: Refer to chart.
 TECHNICAL ORDER NUMBER: Refer to chart.
 PRODUCTION STATUS: Under procurement.
 SHIPPING DATA: Shipped as a complete unit.

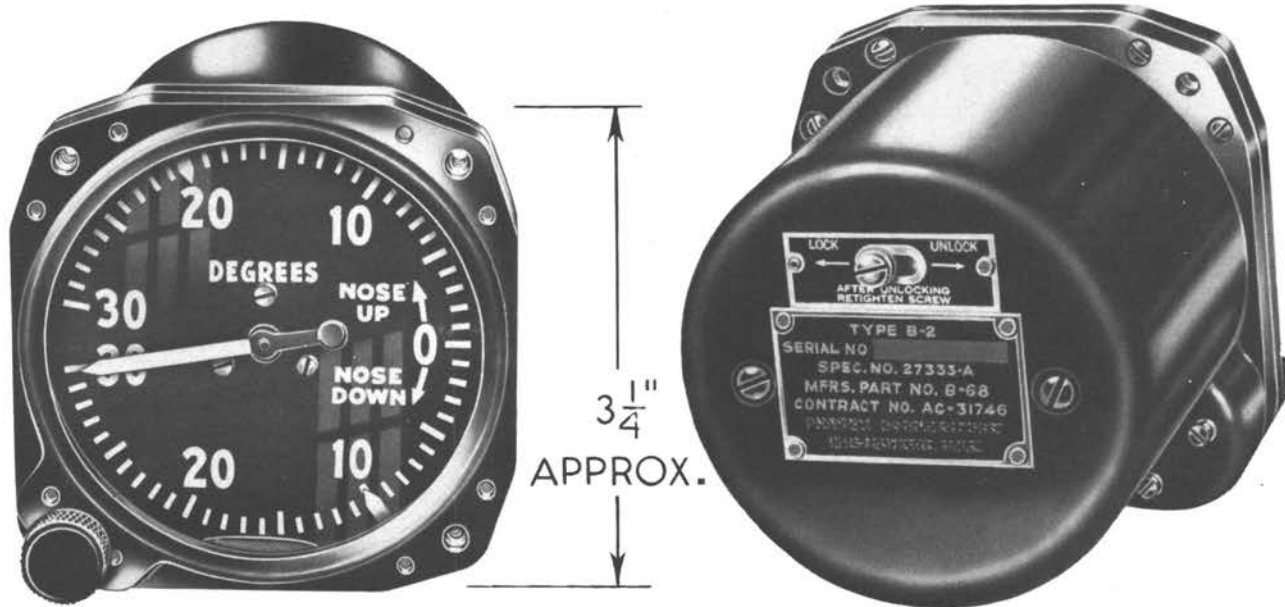
NAVY

SPECIFICATIONS:
 Detail..... AN-GG-A-461
 Superseded..... SQ-81A
 AN DRAWING NUMBER: AN5760 (former Bureau of Aeronautics 842-SK)
 AN PART NUMBER: AN5760-4
 F. S. S. C. STOCK NUMBER: 88-A-351
 PROCUREMENT STATUS: Standard—
 G. F. E.—Order through A. S. O. by
 F. S. S. C. number.

ALL MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number
Kollsman Instrument Division	671BK-07	A-B	6000015360
	671BK-010-4*	A	
	671CK-010-4*	A	
	744BKN-04	N	

INCLINOMETERS INSTRUMENTS — FLIGHT



INCLINOMETER ARMY TYPE B-2

DESCRIPTION: This instrument is used to indicate the angle of the airplane, so bombs may be safely released in bombing operations.

This is accomplished by a compound pendulum which is free to oscillate in a plane parallel to the longitudinal fore and aft axis of the airplane. The pendulum is geared to a pointer which revolves in a limited arc on a dial calibrated through the range from zero (level) to 30 degrees nose up or down. When the airplane noses up or down the pendulum remains vertical, thus changing its position with relation to the rest of the instrument. This change is indicated by the pointer on the dial.

CHARACTERISTICS:

- Dimensions approximately 3 1/4 by 3 1/4 by 3/16 inches
- Weight approximately 1 pound
- Range +30 degrees to -30 degrees, nose up or down
- Dial size 2 3/4 inches diameter
- Markings fluorescent material

ARMY

A. E. REFERENCE NUMBER: 60-3750

SPECIFICATIONS:

- Detail 94-27333
- Superseded 27333-A

TYPE DESIGNATION: B-2

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

NAVY

There is no Navy equivalent for this item.

MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part and Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Perfex Corporation	B-58	A	6000172275	05-20-30	106A/1432
Jaeger Watch Company	5010	A	6000172290	AN 05-20-31	106A/1432



RATE-OF-CLIMB INDICATORS

Rate-of-climb, or vertical speed indicators, show the rate of ascent or descent of the airplane, regardless of its position. These instruments are extremely sensitive, and show a rate of gain or loss of altitude which would be too small to cause a noticeable change in the altimeter reading until considerable altitude change had taken place.

Reference to this indicator helps a pilot to make banked turns without gain or loss of altitude and to maintain constant and definite rates of descent when making landings on instruments alone. In level flight, the pointer is horizontal at the zero mark. In climbing flight, a definite rate is indicated in a clockwise direction, while in descent, indication is made counterclockwise from the zero position. A knob is usually provided on the front of the instrument, to enable the pointer to be set to zero prior to take-off.

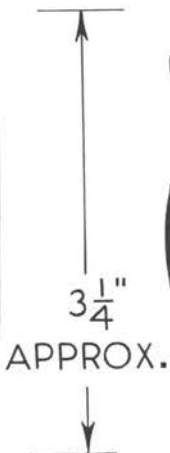
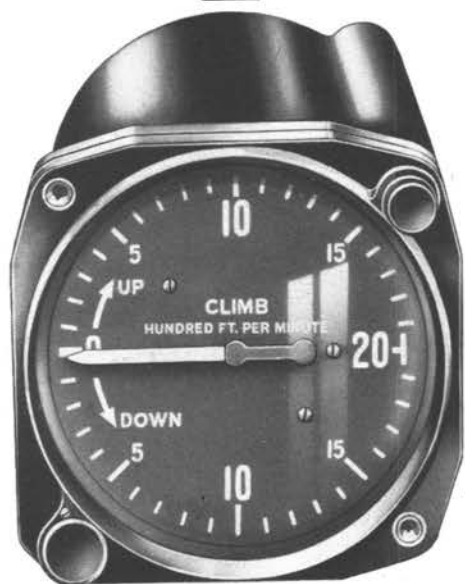
A hollow diaphragm in the instrument case moves a pointer which indicates the rate of ascent or descent in feet per minute. Atmospheric pressure from the static pressure connection of the pitot-static or flush static airspeed tube is led through two ducts, one having unrestricted passage into the diaphragm, while the other has a restricted opening, called a calibrated leak, to the interior of the case surrounding the diaphragm.

As an airplane ascends, the atmospheric pressure decreases, therefore in ascent the pressure of the air in the diaphragm is less than that of the air in the surrounding case. This is due to the restricted flow through the calibrated leak. The difference in pressure is transmitted to the scale by mechanical linkage, and shows the rate of ascent. In descending, the air pressure in the diaphragm exceeds the pressure in the case, and the pressure differential is similarly shown on the descent side of the dial.

To avoid errors in the indications, due to changes in air temperature, automatic adjustments are provided. Compensation for temperature change at different altitudes is accomplished by having the air pass through a charcoal compartment. As the temperature is lowered, the air in the case will contract. This reduces the pressure and tends to expand the diaphragm. At the same time, the compensator is being cooled, and some of the oxygen in the air clings to the surface of the charcoal particles, reducing the pressure within the diaphragm. This is known as absorption. The rate of absorption increases with each decrease in temperature.

Each duct is provided with a valve made of an inner sleeve with a low rate of expansion which contains an aluminum plunger having a high rate of expansion. Warm air expands the plunger and decreases the opening through which the air passes. Cold air contracts the plunger, increasing the size of the passage. These expansions and contractions thus bring about correct readings under varying conditions of temperature.

RATE-OF-CLIMB INDICATORS INSTRUMENTS — FLIGHT



INDICATOR—RATE-OF-CLIMB ARMY TYPE A-6

NAMES: Rate-of-climb indicator
Indicator—climb

Vertical speed indicator

DESCRIPTION: The Army type A-6 rate-of-climb indicator is housed in a standard 2 3/4-inch dial case, and has a zero setting knob located in the lower left corner of the instrument face. It has a standard open scale dial, with graduations from 0 to 20 hundred feet per minute in a clockwise direction for climb, and in a counterclockwise direction for descent.

CHARACTERISTICS:

- Dimensions approximately 3 1/4 by 3 1/4 by 6 1/4 inches (maximum)
- Weight approximately 1 1/4 pounds
- Range 0 to 2000 feet per minute, climb and descent
- Static pressure connection 1/8-inch internal pipe thread with type 811 fittings installed
- Illumination rim light, 1 wire, 3-volt lamp
- Markings: Principal radio-active material
- Minor white paint

ARMY

A. E. REFERENCE NUMBER: 60-6500

SPECIFICATIONS:

- Detail 94-27782-A
- Superseded 94-27782

TYPE DESIGNATION: A-6

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type A-7.

SHIPPING DATA: Shipped as a complete unit.

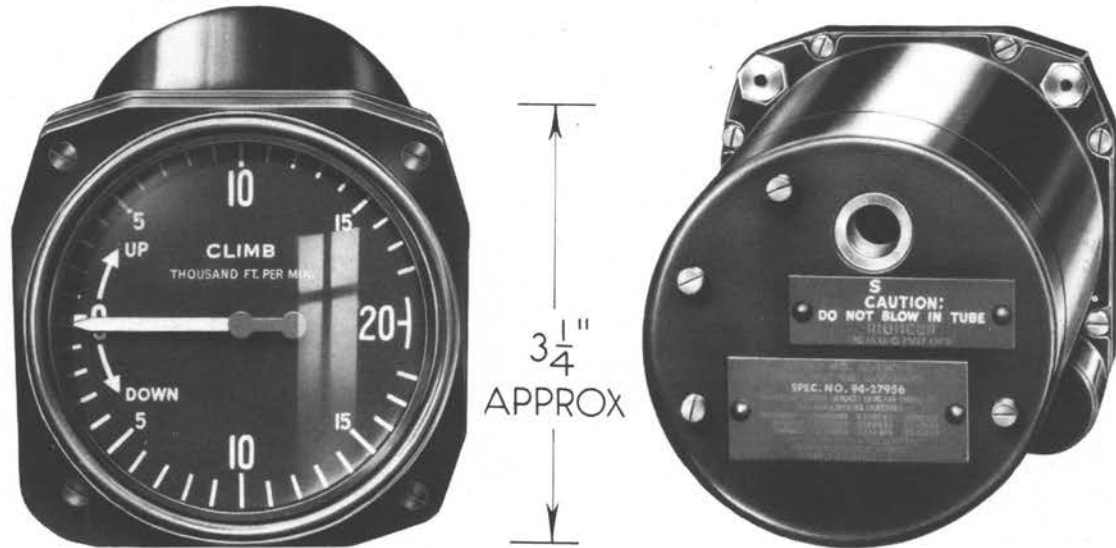
- Gross weight approximately 3 pounds
- Dimensions of carton approximately 6 by 6 by 6 inches

NAVY

There is no Navy equivalent for this item.

ALL MODELS BELOW ARE INTERCHANGEABLE Models are used in services as noted in column 3 A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part and Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Case Depth (Inches)
Pioneer Instrument Division	1623-1E-A1	A-B	6000231250	05-20-17	106A/87	4 3/4
	1623-1F-B1	A-B	6000231500	05-20-17	106A/87	4 3/4
	1623-1B-A1	C				4 3/4
	1623-1D-A1	C				4 3/4
	1623-1B-B1	C				4 3/4
Kollsman Instrument Division	366B-03	A-B	6000231000	05-20-26	106A/87	6
	366B-04	A-B	6000231100	05-20-26	106A/87	6



INDICATOR—RATE-OF-CLIMB
ARMY TYPE A-7

NAMES: Rate-of-climb indicator
Indicator—climb

Vertical speed indicator

DESCRIPTION: The Army type A-7 rate-of-climb indicator is housed in a 2 3/4-inch AN standard dial case, and has a zero adjusting screw in the lower left corner of the instrument face. It has a standard open scale dial, with graduations from 0 to 20 hundred feet per minute in a clockwise direction for climb, and in a counterclockwise direction for descent.

CHARACTERISTICS:

- Dimensions approximately 3 1/4 by 3 1/4 by 6 1/4 inches (maximum)
- Weight approximately 1 1/4 pounds
- Range 0 to 2000 feet per minute, climb and descent
- Static pressure connection 1/8-inch internal pipe thread with type 811 fittings installed
- Illumination none. Designed for external fluorescent lighting
- Markings: Principal radium luminous material (radio-active)
- Minor phosphorescent or fluorescent luminous material

ARMY

A. E. REFERENCE NUMBER: 60-6600

SPECIFICATIONS:

- Detail 94-27956
- Superseded 27956

TYPE DESIGNATION: A-7

A.S.C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type C-2.

SHIPPING DATA: Shipped as a complete unit.

- Gross weight approximately 3 pounds
- Dimensions of carton approximately 6 by 6 by 6 inches

NAVY

There is no Navy equivalent for this item.

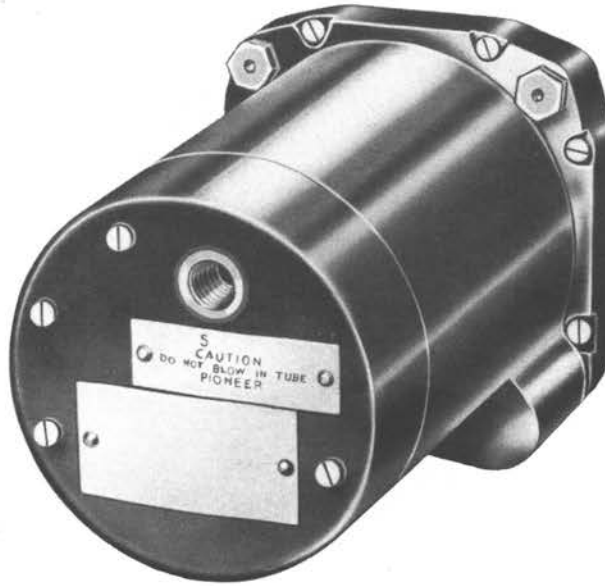
ALL MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part and Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
Pioneer Instrument Division	1637-IN-A1	A-B	6000231780	05-20-17	106A/851	Uniform scale.
	1631-1F-A1	C				Compressed scale.
	1634-1M-A1	A-C	6000228915			Compressed scale.
	1634-1S-A1	C				Compressed scale.
	1634-1T-A1	C				Compressed scale.

TYPE INTERCHANGEABILITY

A. A. F. Type	Range	Dial Graduation	Markings	Fitting
A-7	2000-0-2000	Uniform scale	Luminous—fluorescent—radio-active and fluorescent	Fitting 811 attached
AN5825-1 (C-2)	6000-0-6000	Compressed scale	Luminous—fluorescent—radio-active and fluorescent	Less fitting
AN5825-2	6000-0-6000	Compressed scale	Fluorescent	Less fitting

NOTE: The Army types C-2, AN5825-1, and AN5825-2 are interchangeable with and may be used to replace Army type A-7. The Army type A-7, however, is limited to a smaller range than the other types.



INDICATOR—RATE-OF-CLIMB

AN5825-2 F.S.S.C. NUMBER 88-I-751

NAMES: Rate-of-climb indicator
Indicator—climb

Vertical speed indicator

DESCRIPTION: The AN5825-2 rate-of-climb indicator is housed in a 2 3/4 inch AN standard dial case, and has a zero-adjusting screw in the lower left corner of the instrument face. It has a logarithmic (compressed) scale dial with graduations from 0 to 6 thousand feet per minute in a clockwise direction for climb, and in a counterclockwise direction for descent.

The AN5825-2 indicator is identical with the AN5825-1, except that the AN5825-2 is marked with fluorescent material only, and contains no radio-active markings, since it is used primarily on night fighter airplanes.

CHARACTERISTICS:

Dimensions	approximately 3 1/4 by 3 1/4 by 4 1/8 inches
Weight	approximately 1 1/2 pounds
Range	0 to 6,000 feet per minute, climb and descent
Static pressure connections	1/8 inch internal pipe thread
Illumination	none. Designed for external fluorescent lighting
Markings: Principal	fluorescent
Minor	fluorescent

ARMY

A. E. REFERENCE NUMBER: 60-7000

SPECIFICATIONS:

Detail	AN-GG-I-518
Superseded	94-27967

MANUFACTURER'S PART AND DRAWING NUMBER: Kollsman Instrument Division of Square D Company 731KN-04

AN DRAWING NUMBER: AN5825

AN PART NUMBER: AN5825-2

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

Gross weight	approximately 3 1/2 pounds
Dimensions of carton	approximately 7 1/2 by 7 1/2 by 9 1/2 inches

NAVY

SPECIFICATIONS:

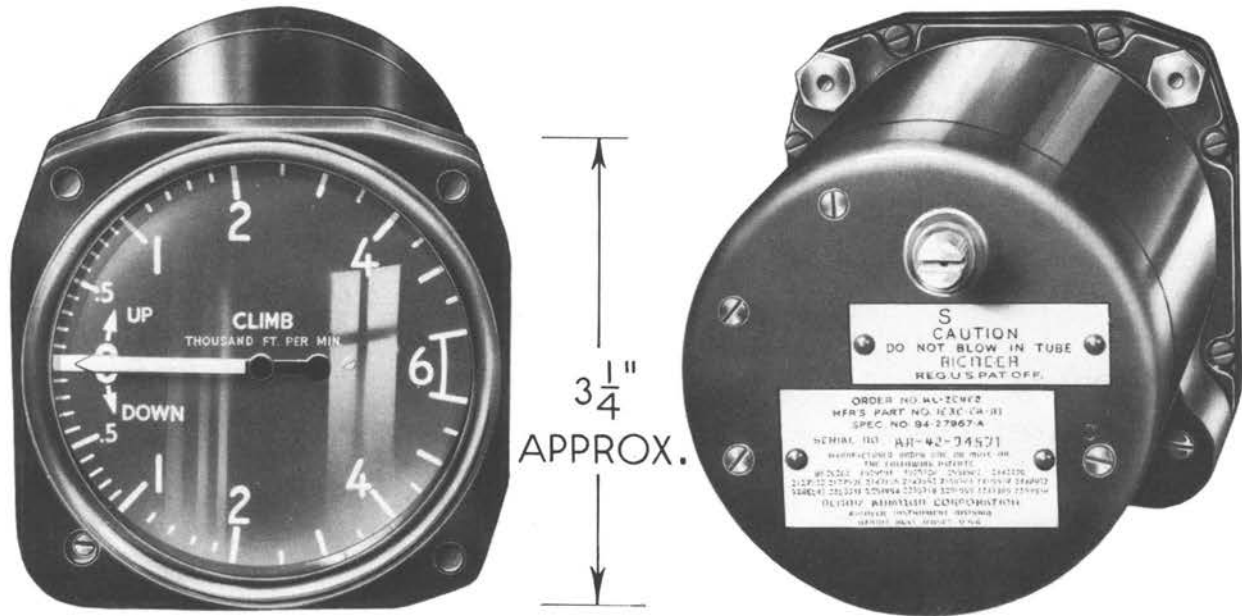
Detail	AN-GG-I-518
Superseded	SQ-91A

AN DRAWING NUMBER: AN5825

AN PART NUMBER: AN5825-2

F.S.S.C. NUMBER: 88-I-751

PROCUREMENT STATUS: Standard—G.F.E.—Order through A.S.O. by F.S.S.C. number.



INDICATOR—RATE-OF-CLIMB

AN5825-1 FORMER ARMY TYPE C-2 F.S.S.C. NUMBER 88-I-750

NAMES: Rate-of-climb indicator
Indicator, climb

Vertical speed indicator

DESCRIPTION: The AN5825-1 rate-of-climb indicator is housed in a 2 3/4 inch AN standard dial case, and has a zero-adjusting screw in the lower left corner of the instrument face. It has a logarithmic (compressed) scale dial with graduations from 0 to 6 thousand feet per minute in a clockwise direction for climb, and in a counterclockwise direction for descent.

CHARACTERISTICS:

- Dimensions..... approximately 3 1/4 by 3 1/4 by 4 1/8 inches
- Weight..... approximately 1 1/2 pounds
- Range..... 0 to 6,000 feet per minute, climb and descent
- Static pressure connections..... 1/8 inch internal pipe thread
- Illumination..... none. Designed for external fluorescent lighting
- Markings: Principal..... radium luminous material
- Minor..... fluorescent luminous material

ARMY

A. E. REFERENCE NUMBER: 60-6800

SPECIFICATIONS:

- Detail..... AN-GG-I-518
- Superseded..... 94-27967

AN DRAWING NUMBER: AN5825

TYPE DESIGNATION: AN5825-1

A.S.C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

- Gross weight..... approximately 3 1/2 pounds
- Dimensions of carton..... approximately 7 1/2 by 7 1/2 by 9 1/2 inches

(Continued on page 162)



INDICATOR—RATE-OF-CLIMB

(Continued from page 161)

NAVY

SPECIFICATIONS:

Detail.....AN-GG-I-518
Superseded.....SQ-91A

AN DRAWING NUMBER: AN5825

AN PART NUMBER: AN5825-1

F.S.S.C. NUMBER: 88-I-750

PROCUREMENT STATUS: Standard—G.F.E.—Order through A.S.O. by F.S.S.C. number.

ALL MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
Kollsman Instrument Division	716K-03	A-N				
	639K-03	A	6000232130	05-20-27		
	731KN-02	N	6000228863			
	661KN-02	N				
	731KN-04	A-N				Fluorescent markings only.
Pioneer Instrument Division	1636-6A-A1	A-B	6000232140	05-20-17	106A/715	
	1636-6A-B1	A-B	6000232141	05-20-17	106A/715	
	1634-6C-A2	B-C	6000228920		106A/526	
	1636-6F-A1	C				
	1636-6F-B1	C				
	1640-6E-A1	N				
Ford Motor Co.	1636-6A-A1	A-B	6000232140	05-20-17	106A/715	
	1636-6A-B1	A-B	6000232141	05-20-17	106A/715	
Bulova Watch Co.	ROC-1	A	6000228825			



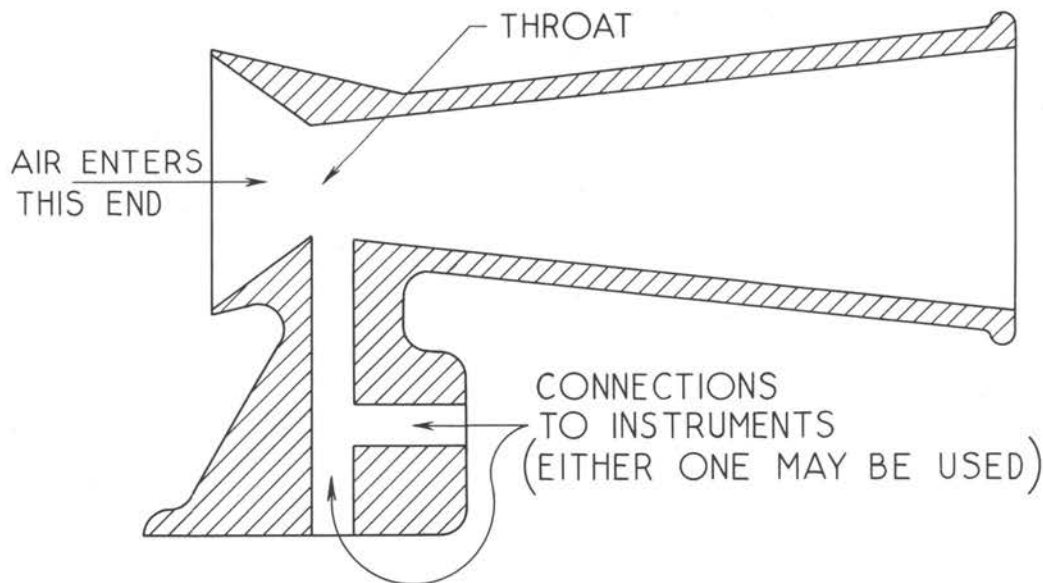
POWER VENTURI TUBES

Power venturi tubes provide a source of vacuum for the operation of air-driven instruments.

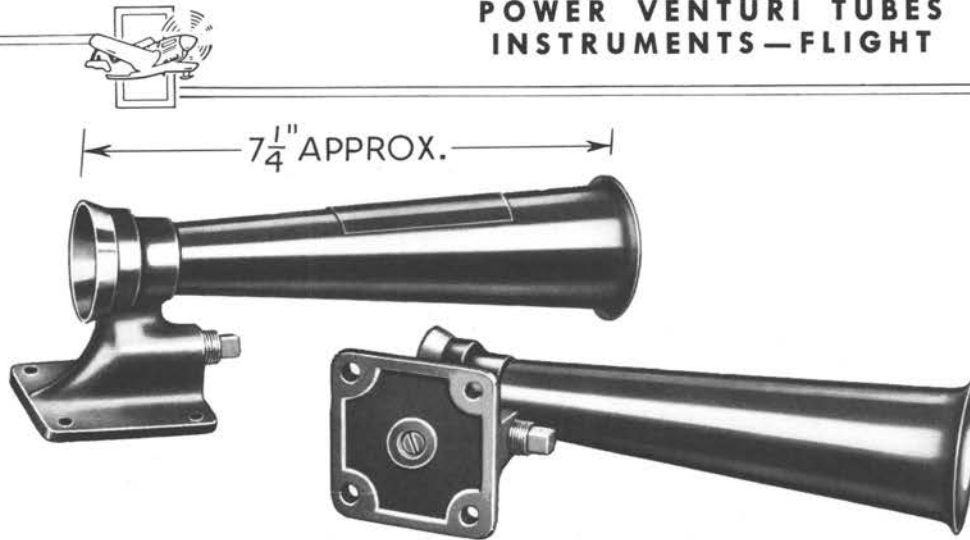
The venturi is a tube shaped like a double “V” and has a small opening, called a throat, at the junction of the “Vs”. It is installed with the small “V” pointed toward the front of the airplane. A volume of air enters the mouth of the tube, flows past the throat, continues through the broadening tube and passes out at the tail end. As the air passes the throat, it expands in the wide part of the tube, creating a partial vacuum. The vacuum draws air from the throat, which in turn sets up a vacuum in the pipe line leading from the instruments.

Normally, the vacuum necessary to operate the aircraft instruments is supplied by an engine-driven vacuum pump. Since a glider has no engine, it is equipped with a power venturi tube to provide the air power required for the few instruments carried. Power venturi tubes are also used in light airplanes where the air demand is low. They may be installed for standby service in airplanes having an air pump, and used in the event of failure of the pump.

Two types of power venturi are used; one has a single throat, the other a double throat. They are alike in performance, but differ in their capacities to supply vacuum air. Venturi tubes are made of either metal or plastic.



POWER VENTURI TUBES INSTRUMENTS—FLIGHT



TUBE—SINGLE THROAT POWER VENTURI

AN5805-1 FORMER ARMY TYPE A-3A F. S. S. C. NUMBER 88-T-3570

NAMES: Single throat power venturi tube
 Tube—power venturi, type A-3A (Aircraft)
 Power venturi tube

Tube, power venturi, turn and bank, single throat
 Venturi tube
 Power venturi tube assembly

DESCRIPTION: The AN5805-1 power venturi is a single throat tube, used to create a vacuum for the operation of flight instruments.
 The venturi tube is mounted in the airstream, and the velocity of the air passing through it creates the vacuum, which is directed through tubing to the instrument.

CHARACTERISTICS:

Dimensions.....approximately 7 1/4 by 2 5/8 by 1 3/4 inches.
 Weight.....approximately 2/3 pound
 Vacuum.....6.85 inches mercury at 225 miles per hour
 airspeed
 Mounting.....side of fuselage

ARMY

A. E. REFERENCE NUMBER: 60-9800

SPECIFICATIONS:

Detail.....AN-T-10
 Superseded.....94-27858A

AN DRAWING NUMBER: AN5805

AN PART NUMBER: AN5805-1

A. S. C. STOCK NUMBER: 6000454735 (procurement stock number)

TECHNICAL ORDER NUMBER: 05-50-2

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

NAVY

SPECIFICATIONS:

Detail.....AN-T-10

AN DRAWING NUMBER: AN5805

AN PART NUMBER: AN5805-1

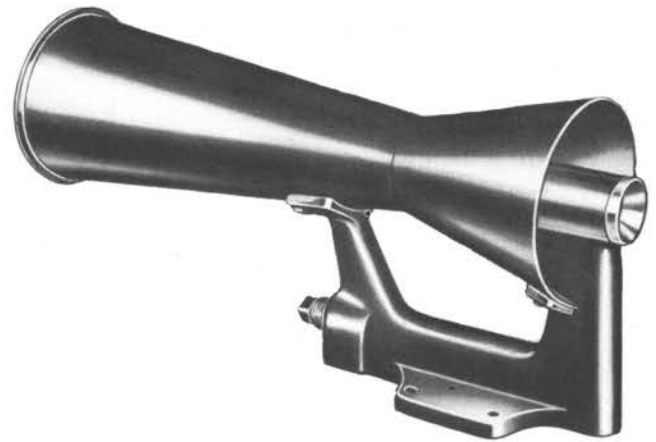
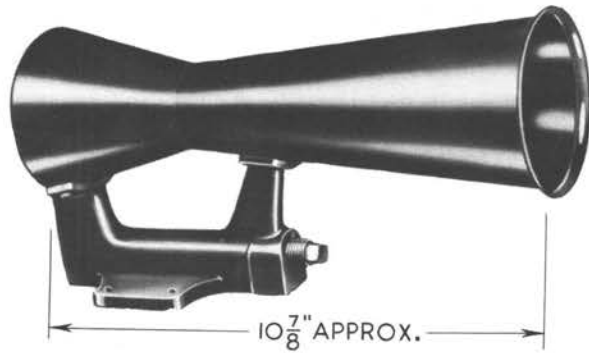
FORMER N. A. F. DRAWING: 39222

F. S. S. C. STOCK NUMBER: 88-T-3570

PROCUREMENT STATUS: Standard. G. F. E.—Order through A. S. O. by F. S. S. C. number.

ALL MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part and Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	A. A. F. Drawing	Remarks
Manning Bowman & Co.	42-126-156	A-N-B			106A/854		
Cruver Manufacturing Co., Chicago	1252	A					This venturi tube is made of plastic material and is AAF type A-4.
Pioneer Instrument Division	10017-1-A	A-B	6000454700	05-50-2	106A/854	41D6889	Air Corps type A-3; discontinued source. The basic A-3 is converted to A-3A by replacing front cone with a larger one for improved performance.
	10017-2-A	B-C			106A/167		



**TUBE — DOUBLE THROAT
POWER VENTURI**

AN5807-1 FORMER ARMY TYPE B-4

NAMES: Double throat power venturi tube
Power venturi tube
Tube, power venturi (aircraft-double-throat)
Venturi tube

DESCRIPTION: The AN5807-1 power venturi tube is a double throat tube, used to create a vacuum for the operation of flight instruments.

It is mounted in the air stream, and the velocity of the air passing through creates the vacuum, which is directed through tubing to the instruments.

CHARACTERISTICS:

Dimensions approximately 10 7/8 by 5 5/32 by 3 1/4 inches
Weight approximately 1 pound
Vacuum 5.6 inches mercury at 225 miles per hour airspeed
Mounting side of fuselage
Construction metal or plastic

ARMY

A. E. REFERENCE NUMBER: 60-9850

SPECIFICATIONS:

Detail AN-T-10
Superseded 94-27774

AN DRAWING NUMBER: AN5807

AN PART NUMBER: AN5807-1

A. S. C. STOCK NUMBER: 6000456250 (procurement stock number)

TECHNICAL ORDER NUMBER: 05-50-2

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

NAVY

There is no Navy equivalent for this item.

ALL MODELS BELOW ARE INTERCHANGEABLE
Models are used in services as noted in column 3
A-Army, N-Navy, B-British, C-Commercial

Manufacturer	Manufacturer's Part and Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
Commonwealth Engineering Co.	B-1271	A-B	6000455450	05-50-2	106A/1331	
Manning Bowman & Co.	126-155	A-B			106A/1331	
National Color Type Co.	140305	A-B	6000456250	05-50-2	106A/1331	
	B-1271	A-B	6000455450	05-50-2	106A/1331	
Bersted Mfg. Co.	126-155	A-B			106A/1331	
Cruger Mfg. Co.	1280	A			106A/1331	Plastic.
	1282	A-B			106A/1331	
Sperry Gyroscope Co., Inc.	640541	A-B	6000455750	05-50-2	106A/1331	
	640159	A-B	6000455500	05-50-2	106A/1331	
	640541J	A-B	6000456000		106A/1331	
	640600	A-B	6000456100		106A/1331	