

CHRISTEN 



Pitts
Special
Aircraft

The Aerobatic Standard

The Pitts Special

The Pitts Special has been the world's leading aerobatic aircraft for over 35 years. In the United States the Pitts Special has won more unlimited-class aerobatic contests than any other aircraft type, and it has traditionally been one of the dominant aircraft in world competition. The current array of Pitts Special models represents the latest design refinement of this superlative family of aerobatic aircraft. All versions of the Pitts Special have been optimized for competition aerobatic flying and all include the following features:

- (a) Welded 4130 tubular fuselage, fabric covered except for aluminum side panels.
- (b) Symmetrical wing airfoils (except S-1D-EW).
- (c) Four ailerons.
- (d) Servo trimtabs which provide both elevator trim and aerodynamic boost.
- (e) Spruce and plywood wing ribs, spruce spars, aluminum leading and trailing edges.
- (f) Fabric covered wing and tail sections.
- (g) Load-factor design which substantially exceeds the FAA requirement of +6g and -3g.

In all Pitts Special aircraft, equipment such as radios, antennas, and smoke systems are optional. Most standard Pitts Special aircraft include full electrical systems and canopies; if standard versions do not include electrical systems or canopies, this equipment is optionally available.

Single-Place Aircraft

Production Aircraft	Homebuilt Construction Kit	Aircraft Drawing Set	Engine		Propeller	General
			HP	Cyls		
S-1S	S-1S-E	S-1S-EW S-1D-EW	180	4	Fixed	Small size, light and agile, most economical*
S-1T	S-1T-E	N/A	200	4	Constant-speed	Like S-1S but more powerful heavier "feel"
S-2S	S-2S-E	N/A	260	6	Constant-speed	Large size, smooth and stable, highest performance and easily judged from ground

*S-1S-EW equivalent to S-1S; S-1D-EW is similar but has M-6 airfoil for "flat" wing.

Production Aircraft

All of the Pitts Special aircraft identified as "Production Aircraft" are FAA Type Certificated in the Acrobatic Category under Part 23 of the Federal Aviation Regulations.

These aircraft are fabricated, assembled, and test flown at the Aircraft Manufacturing Division of Christen Industries in Afton, Wyoming. Aircraft rigging is meticulously adjusted during flight testing to ensure that every aircraft is aerodynamically optimized for maximum performance in aerobatic competition. The most popular production aircraft are the following:

Model S-1T—Small and powerful with extremely high performance particularly with respect to both aileron-roll rate and snap-roll rate. The Pitts Special S-1T is regularly used in all competition categories in both national and world contests.

Model S-2S—Large airframe and substantially more powerful engine than the S-1T. The most recent addition to the single-place line. The Pitts Special S-2S provides superior vertical penetration and high speed.

Model S-2B—Similar to the S-2S in size and power, but in two-place configuration. The Pitts Special S-2B can be flown competitively in unlimited-class competition, and it is ideal for advanced aerobatic instruction.

Construction Kits and Drawing Sets

Construction kits which include parts and assembly drawings are available for most Pitts Special designs. Finished aircraft constructed from these kits are generally equivalent to the corresponding factory-built aircraft.

Homebuilt aircraft are constructed from a series of kits, each of which contains related parts for a complete functional section of the aircraft. All parts needed for construction are included in the kits and all welded assemblies are completed at the factory by certified welders. The kits include assembly drawings, a parts catalog, and a flight manual. (The model number for each kit-built aircraft is the same as the production aircraft model number plus the suffix letter "E".)

Homebuilt versions of the S-1S may be constructed from construction drawing sets by homebuilders having reasonably complete shop facilities and a source of aircraft construction materials. Construction kits and drawing sets do not contain instructional information and are intended for use by experienced homebuilders only. They are not intended for first-time homebuilders.

Homebuilt Pitts Specials are certificated by the FAA in the Experimental Category either as "Experimental-Amateur Built" or "Experimental-Exhibition."

Two-Place Aircraft

Production Aircraft	Homebuilt Construction Kit	Aircraft Drawing Set	Engine		Propeller	General
			HP	Cyls		
S-2	S-2-E	N/A	180	4	Fixed	Light and agile, most economical
S-2A	S-2A-E	N/A	200	4	Constant-speed	Like S-2 but more powerful and heavier "feel"
S-2B	N/A	N/A	260	6	Constant-speed	Smooth & stable, only 2-place fully competitive in unlimited contests



The Pitts Special is the choice of most of the world's leading aerobatic demonstration teams.



Pitts Special S-1T

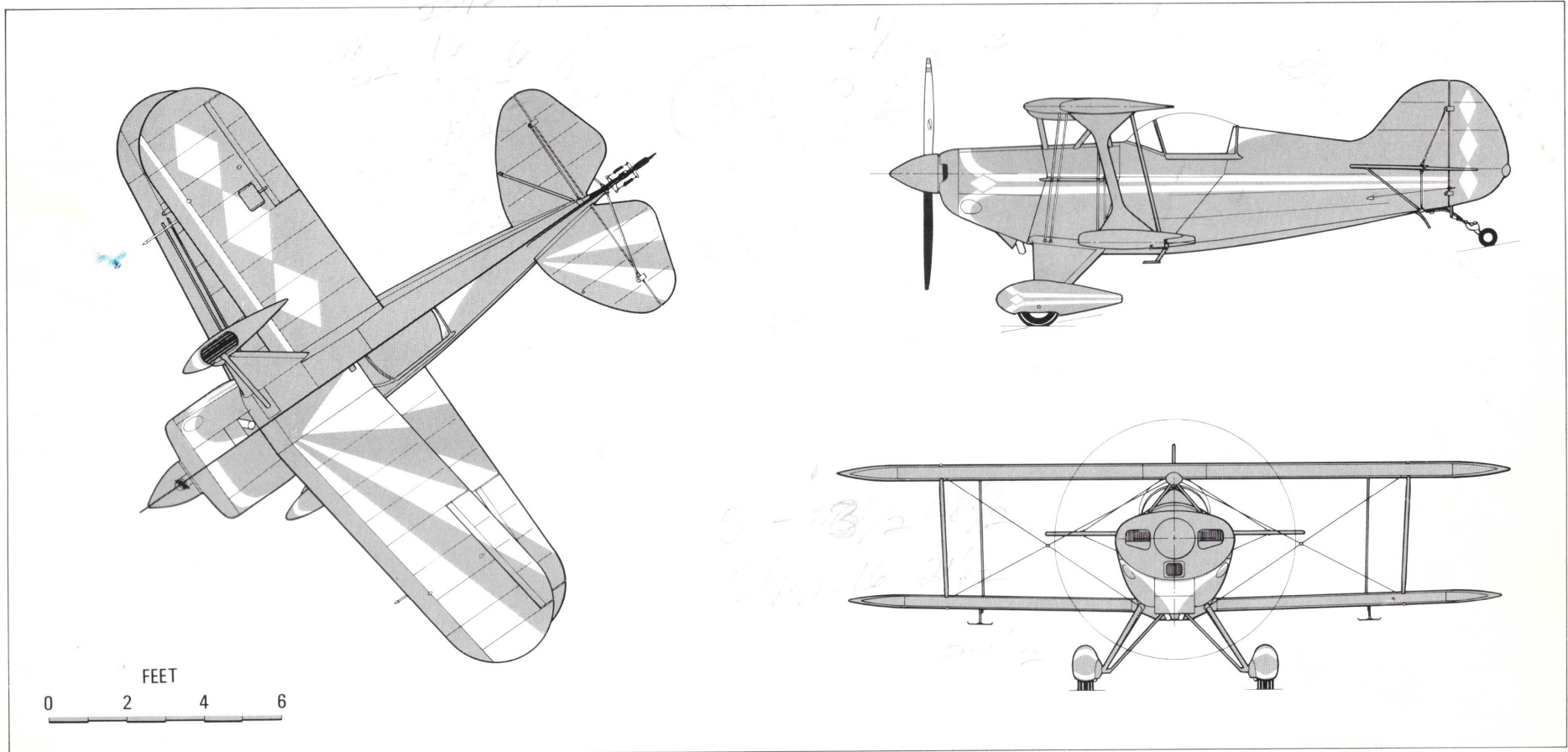
The S-1T is the current refined version of the original Pitts Special and is easily recognized as the small-airframe single-place Pitts Special. This aircraft has the highest roll rate and best snap roll characteristics of the Pitts Special line.

The S-1T is powered by a 200 hp AVCO/Lycoming AEIO-360-A1E engine with a Hartzell constant-speed propeller. The standard S-1T includes a fixed windscreen with sliding canopy and the stripe-and-diamond paint design, as shown. Additional standard features include altimeter, airspeed indicator, compass, accelerometer (g meter), recording tachometer, oil temperature and oil pressure gage, fuel flow and manifold pressure gage, cylinder-head temperature (CHT) gage, and stall warning system. A Christen seat belt system with secondary lap belt is supplied, and the engine is equipped with a Christen inverted oil system. The standard S-1T is not supplied

with an electrical system and hand propping is necessary for starting. Several optional electrical systems are available.

The homebuilt version of the S-1T which is constructed from a series of kits is designated S-1T-E. A Pitts Special S-1T-E constructed from kits is essentially identical to the production S-1T, but must be licensed in the FAA Experimental Category.

The S-1S is the earlier version of this model. It is nearly identical in appearance with the S-1T but is lighter and more economical to operate. The S-1S is equipped with a 180 hp AVCO/Lycoming AEIO-360-B4A engine and fixed-pitch Sensenich propeller. The wings are attached farther aft for balance of the lighter engine, and an open cockpit with fixed windscreen is standard.



The S-1S is perhaps the most popular aircraft type for homebuilder kit construction. It is essentially identical to the production S-1S, but when constructed from kits it is designated as S-1S-E. The complete drawing set for the S-1S including authorization to construct one aircraft is designated S-1S-EW. Drawing sets include part fabrication drawings and assembly drawings, as well as the parts catalog and airplane flight manual.

The S-1D is the most stable and most easily flown Pitts Special model. It is available only for homebuilder construction as a complete drawing set which is designated S-1D-EW and which includes authorization to construct one aircraft. This aircraft is similar to the S-1S, but uses the original M-6 non-symmetrical airfoil, which results in lower stalling speed and docile handling characteristics.

S-1T Specifications

Top Speed	185 mph
Cruise Speed	175 mph
Stall Speed	64 mph
Never Exceed Speed	203 mph
Rate of Roll	270°/Sec
Rate of Climb	2800 fpm
Range (55% pwr, 1/2 hr reserve)	309 mi
Gross Weight	1150 lb
Empty Weight	830 lb

Useful Load	320 lb
Wing Loading	11.7 lb/sq ft
Power Loading	5.75 lb/hp
Length	15'6"
Span	17'4"
Height	6'3"
Wing Area	98 1/2 sq ft
Fuel Capacity	20 U.S. gal. (19 usable)
Oil Capacity	8 qt



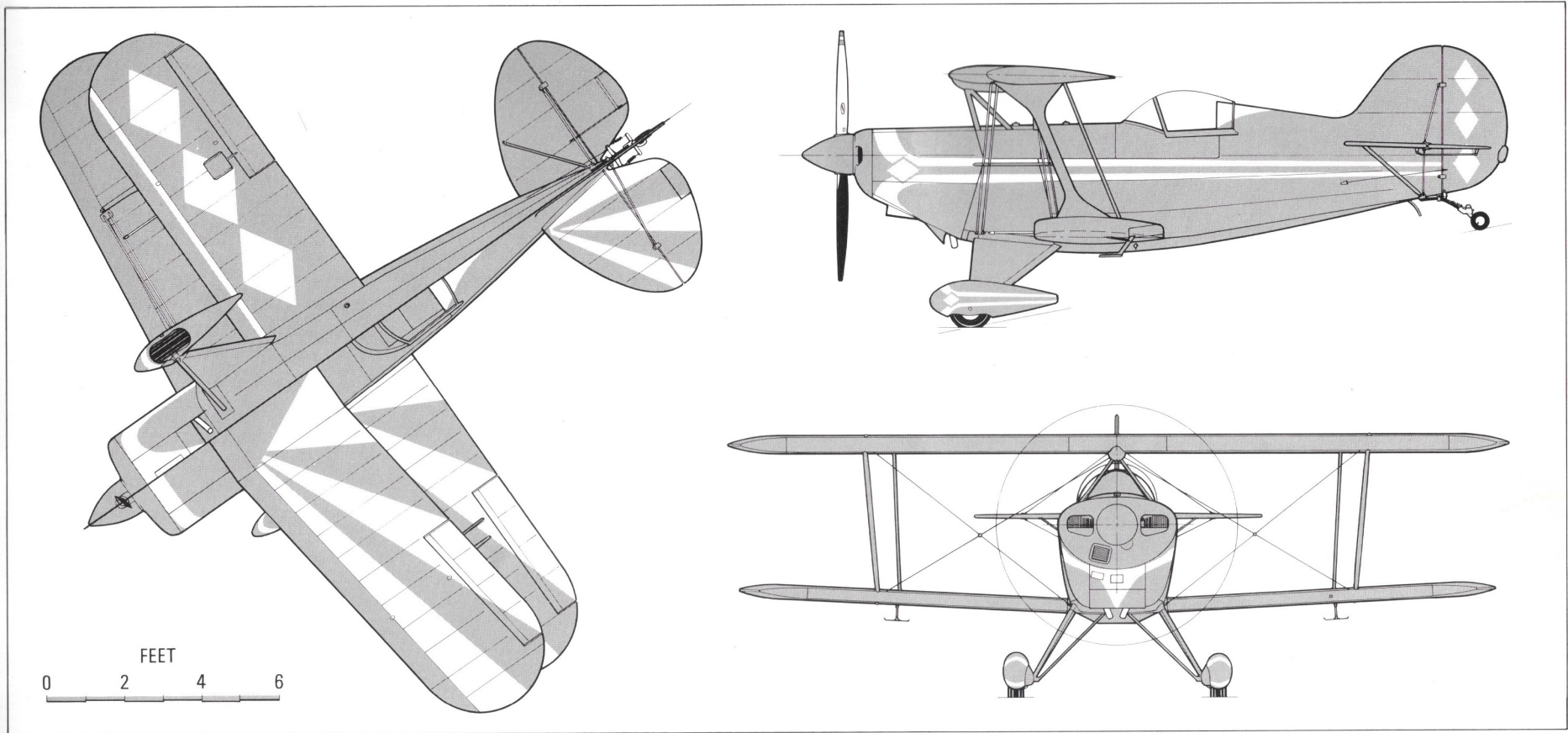
Pitts Special S-2S

The single-place S-2S has the greatest vertical penetration and highest speed of any aircraft in the Pitts Special line. The S-2S is powered by a 260 hp AVCO/Lycoming AEIO-540-D4A5 engine with a Hartzell constant-speed propeller. With its 35 gallon fuel tank, the cruising range of the S-2S is over 400 miles with a 30 minute reserve.

The standard S-2S includes a fixed windscreen with sliding canopy and the stripe-and-diamond paint design, as shown. Additional standard features include altimeter, airspeed indicator, compass, accelerometer (g meter), recording tachometer, oil temperature and pressure gage, fuel flow and manifold pressure gage, cylinder-head temperature (CHT) gage, stall-warning system, and electrical

system including gel-cell battery. A Christen seat belt system with secondary lap belt is supplied, and the engine is equipped with a Christen inverted oil system.

The relatively large size of the aircraft makes the S-2S ideal for demonstration flying at airshows, and it is easily judged from the ground at aerobatic contests. In addition, the relatively large cockpit is capable of accommodating pilots up to 6 ft. 4 in. height and 250 lb.



The homebuilt version of the S-2S which is constructed from a series of kits is designated S-2S-E. A Pitts Special S-2S-E is essentially identical to the production S-2S, but it must be licensed in the FAA Experimental Category.

S-2S Specifications

Top Speed 187 mph
Cruise Speed 175 mph
Stall Speed 58 mph
Never Exceed Speed 203 mph
Rate of Roll 240°/Sec
Rate of Climb 2800 fpm
Range (55% pwr, 1/2 hr reserve) 405 mi
Gross Weight 1500 lb
Empty Weight 1100 lb

Useful Load 400 lb
Wing Loading 12 lb/sq ft
Power Loading 5.77 lb/hp
Length 17'4"
Span 20'0"
Height 6'7½"
Wing Area 125 sq ft
Fuel Capacity 35 U.S. gal. (34 usable)
Oil Capacity 12 qt



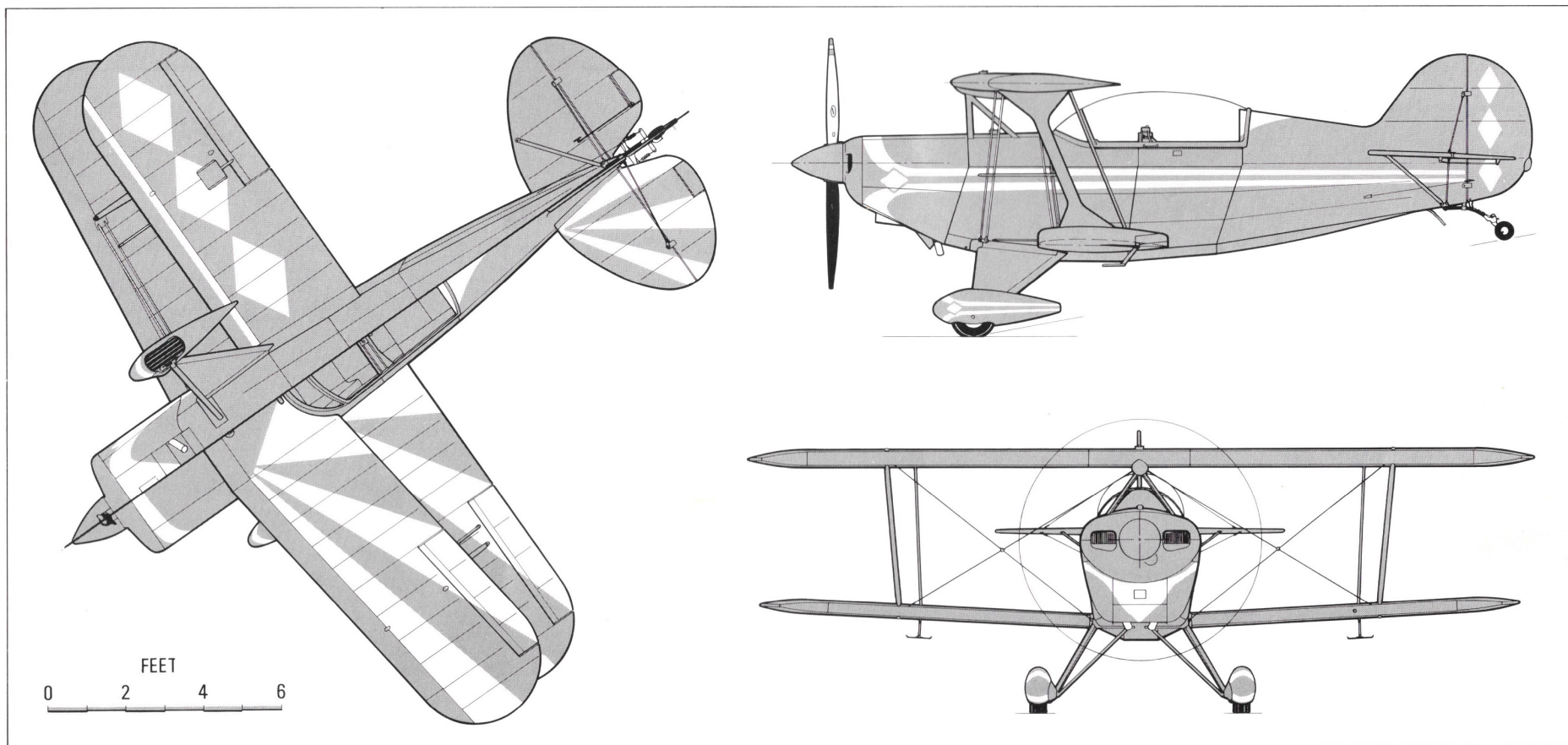
Pitts Special S-2B

The S-2B is the outstanding two-place version of the Pitts Special. Equipped with a 260 hp engine, this aircraft has the unique capability of true unlimited-class performance, even while carrying both a pilot and passenger. The Pitts Special S-2B is the preferred aircraft for dual instruction for all aerobatic maneuvers. In addition it is a suitable aircraft for limited cross-country flying. Like the S-2S, the S-2B is powered by a 260 hp AVCO/Lycoming AEIO-540-D4A5 engine with a Hartzell constant-speed propeller.

The standard S-2B includes a fixed windscreen with jettisonable canopy and the stripe-and-diamond paint design, as shown. Additional standard features include altimeter, airspeed indicator, compass, accelerometer (g meter), recording tachometer, oil temperature and pressure gage, fuel flow and manifold pressure gage, cylinder-head temperature

(CHT) gage, stall warning system, and full electrical system including gel-cell battery. Basic engine and flight instruments are duplicated in both cockpits. A Christen seat belt system is supplied for both cockpits with secondary lap belt provided for the rear cockpit, and the engine is equipped with a Christen inverted oil system.

The S-2 and S-2A are earlier versions of this aircraft type. They are both similar in appearance to the S-2B, but are supplied with smaller engines. Open cockpits with fixed windscreens are standard. The S-2 is much lighter because it is equipped with a 180 hp engine and fixed-pitch propeller. The S-2A has a slightly heavier feel than the S-2 but is somewhat higher powered; it is equipped with a 200 hp engine and constant-speed propeller.



The homebuilt version of the S-2 constructed from kits is designated S-2-E, and the homebuilt version of the S-2A constructed from kits is designated S-2A-E. The homebuilt aircraft versions are essentially equivalent to the factory-built versions of the aircraft, but they must be licensed in the FAA Experimental Category.

S-2B Specifications

Top Speed 187 mph
Cruise Speed 175 mph
Stall Speed 60 mph
Never Exceed Speed 210 mph
Rate of Roll 240°/Sec
Rate of Climb 2700 fpm
Range (55% pwr, 1/2 hr reserve) 319 mi
Gross Weight (acrobatic category) 1625 lb
Gross Weight (normal category) 1700 lb
Empty Weight 1150 lb
Useful Load 475 lb

Wing Loading (acrobatic category) 13 lb/sq ft
Wing Loading (normal category) 13.6 lb/sq ft
Power Loading (acrobatic category) 6.25 lb/hp
Power Loading (normal category) 6.54 lb/hp
Length 18'9"
Span 20'0"
Height 6'7½"
Wing Area 125 sq ft
Fuel Capacity 29 U.S. gal. (28 usable)
Oil Capacity 12 qt

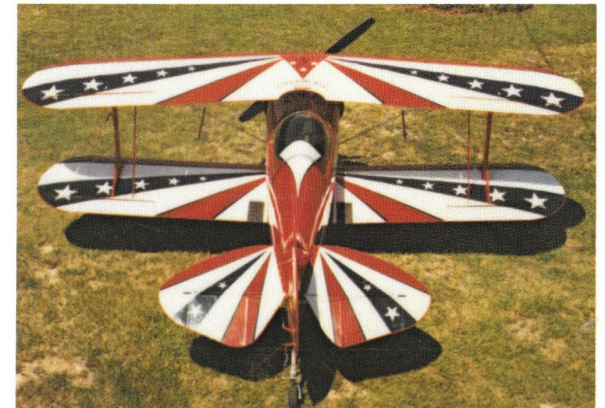
Standard Paint Design

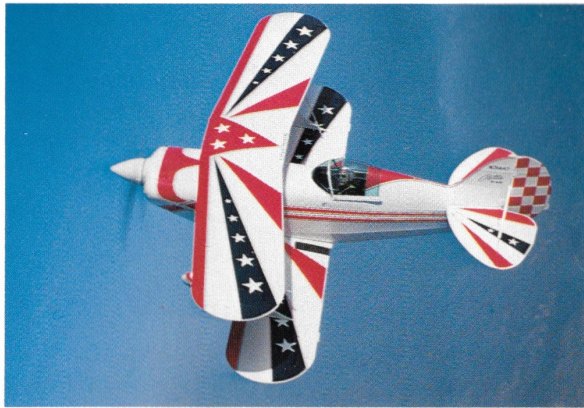
The standard Pitts Special finish is the popular three-color stripe-and-diamond paint design. From above, the wings and elevator/stabilizer carry the traditional Pitts Special sunburst design. From below, the lower wings are painted with a distinctive diamond design.

The stripe-and-diamond design is normally supplied using a red base color with white trim stripes and a black trim line. Any other available dope and enamel colors can be selected for use with the stripe-and-diamond design.

Custom Paint Designs

Any Pitts Special can be supplied with a custom paint design in accordance with customer-supplied drawings and specifications. Colors can be selected from the standard factory dopes and enamels, but custom designs are limited to a selection of three colors.





CHRISTEN 

CHRISTEN INDUSTRIES, INC.
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The entire Pitts Special aircraft product line is described in a large detailed information package with several brochures presenting general information, design and performance specifications, detailed construction kit descriptions, pricing, and ordering information. The information package includes a refund certificate applicable to all Pitts Special or Christen Industries non-memorabilia aviation products.

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HOLLISTER, CALIFORNIA 95023

Please send me the Pitts Special information package (including \$10 refund certificate). My check for \$10 is enclosed. Add \$2 outside U.S.

Amount enclosed \$ _____

Name _____

Address _____

City/State/Zip _____