

**For the Most Efficient and Economical  
Application of Agricultural Chemicals**



# **PIPER PA-18-A**



**PIPER AIRCRAFT CORPORATION**

Lock Haven, Pennsylvania • U. S. A.



## PERFORMANCE

	PA-18-A 135 1500 lb. Gross	PA-18-A Sprayer or Duster 2070 lb. Gross*
Top Speed (mph)	127	110
Cruising Speed (75% power—mph)	112	95
Stalling Speed (mph)	38†	45†
Take-off Run (ft.)	210†	325†
Take-off (over 50-ft. barrier) (ft.)	510†	950†
Landing Roll (ft.)	300†	410†
Landing Distance (over 50-ft. barrier) (ft.)	600†	875†
Rate of Climb (ft./min.)	1050	680
Service Ceiling (ft.)	19,500	13,800
Absolute Ceiling (ft.)	21,700	16,100
Cruising Range (75% power)	500	440

## SPECIFICATIONS

	PA-18-A 135	PA-18-A Sprayer or Duster
Engine	Lycoming O-290-D2	Lycoming O-290-D2
Horsepower and RPM	135 <sup>HP</sup> 2600	135 <sup>HP</sup> 2600
Gross Weight (lb.)	1,500	2,070*
Empty Weight (Standard, lb.)	930	1,020
Useful Load (lb.)	570	1,050
Wing Span (ft.)	35.3	35.3
Wing Area (sq. ft.)	178.5	178.5
Length (ft.)	22.4	22.4
Height (ft.)	6.7	6.7
Power Loading (lb./hp.)	12.0	16.6
Wing Loading (lb./sq. ft.)	8.4	11.6
Baggage Capacity (lb.)	50	50
Fuel Capacity (gal.)	36	36

\*Gross Weight over normal 1500 lb. is now permitted for special purpose uses under Part 8 of CAR. Recommended gross weight is 2070 lb. †Flaps extended.

Performance figures are for airplanes flown at gross weight under standard conditions at sea level.



**MANEUVERABILITY** and high performance are outstanding features of the PA-18-A. Light wing-loading means less mushing on pull-ups, makes it possible to get in closer to tree-lines. Ability to land and take-off in short, rough fields means loading closer to job—a valuable economy.

# PIPER PA-18-A built for Agricultural

The use of aircraft to apply agricultural chemicals to improve crop productivity, combat weeds and insects, and to improve the land has grown tremendously in recent years. It has produced the need for an airplane with proper load carrying ability, performance characteristics and economy of operation to suit the peculiar requirements of the task.

The Piper PA-18-A is the first applicator airplane to be built in quantity with factory-designed and installed dispersal equipment as an integral part of the airplane. It combines the unmatched performance and load-carrying characteristics of the 135 horsepower Piper Super Cub with the most efficient dispersal equipment available. As a duster, sprayer, or combination unit, the PA-18-A has many features and improvements for safer, more efficient and economical aerial application than ever before possible.

For virtually every type of aerial application the PA-18-A has these superior advantages:

**LOWEST COST PER ACRE.** The PA-18-A carries the same load as efficiently as planes of more than twice the power. Corresponding reduction in operating costs, maintenance and servicing means less cost of application. And its initial cost is so low that a whole fleet of PA-18-A's may be purchased for the price of one rotary-wing aircraft.

**MOST DEPENDABLE.** Twenty-two years of steady development by Piper has resulted in a "bug-free" airplane, proven and improved by the experience of millions of hours of flying in peace and combat. The PA-18-A is always "ready to go," an important factor since chemicals must usually be applied at just the right time of day or condition of crop.

**QUICKLY CONVERTIBLE.** The PA-18-A combination model is suitable for both dust or spray. Conversion is accomplished in one and a half man hours.

**SPECTACULAR PERFORMANCE.** With nearly a half-ton load, permissible under C.A.A. regulations for special purpose flying, the PA-18-A will take off in but a few hundred feet—can, therefore, operate from small fields closer to the job. Climb is spectacular and zooming characteristics excellent for close-in work at tree-lines. Piper sprayers have operated successfully with full loads at 10,000 feet in Iran. Safe maneuvering speed down to less than 40 mph is also possible.

# FEATURES



**LARGE CAPACITY TANK** holds 110 gallons of liquid or 18 cubic feet of dust, the equivalent of the pile of lime sacks shown above. Tank is removable through turtledeck which is reinforced to prevent loading damage. Large tightly-sealed hatch is at convenient height.



**FLOATING BOOMS** swing back and up if they hit ground objects, reducing possibility of damage to dispersal equipment and plane. 24 nozzles with positive shut-off feature, are of highest available quality, with interchangeable orifices for coverage of one-half to five gallons per acre.

## especially Flying



**SLOTTED VENTURI**, with double gates and lateral dispersal plates, was developed after very extensive testing and study of existing types. Positive, uniform flow of dust is assured by correctly engineered agitator in the hopper. Proper aerodynamic design plus use of flaps gives wide 50 foot swath with excellent penetration.



**PILOT SAFETY FEATURES** include very heavy safety belt and shoulder harness and excellent forward visibility. Comfortable seat and cockpit and Piper's famous flying ease reduce pilot fatigue. Landing gear has leading edge wire cutters. Sprayer model also equipped with tank-level gauge at right side of cabin for easy, instantaneous reference.

### UP TO 15 GALLONS PER ACRE

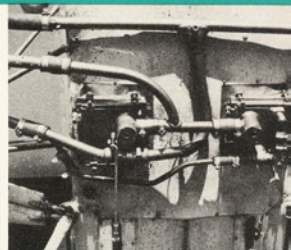
With special booms (46 nozzles) and high volume pump, available at extra cost, the PA-18-A disperses 15 gallons per acre with 33 foot swath or 10 gallons per acre with 50 foot swath.

### AND THE "QUARTER-TON TRUCK"

The PA-18-A is available in two other versions—as a standard two-place plane with dual controls for training and general utility flying and as a "quarter-ton truck" with single controls in front seat. Rear seat is easily removable leaving a spacious area for freight. Heavy reinforced floor is completely free of controls and other obstructions. Either version can be readily converted for dusting or spraying.



**MANY FEATURES FOR EASY MAINTENANCE** reduce upkeep costs such as fuselage under-belly which is quickly removable for cleaning. Motor mount is hinged for quick access to rear-of-engine accessories. Non-flammable Piper Duraclad finish is easy to maintain and repair.



**PRESSURE SYSTEM** under fuselage incorporates alternate shut-off units and pressure by-pass lines which prevent excessive pressures with spray nozzles closed. Tough neoprene connections used throughout. Air-driven, gear-type pump is long lasting, also assures adequate agitation.

# Extensive Research and Testing Behind Many Features of New Piper PA-18-A

In developing the Piper PA-18-A Piper engineers studied the requirements and suggestions of hundreds of experienced aerial applicators, worked closely with agricultural and entomological experts and flew hundreds of hours of test work in perfecting both the features of the airplane and proper dispersal equipment. Much of the development was done in close collaboration with the Delta Experimental Station at Stoneville, Miss. and with Ohio State University.

Accurate and uniform dispersal of both liquids and dust were uppermost in the minds of Piper's development group. Shown to the right is one of many flight tests conducted to measure rate and uniformity of dispersal on test strips of paper. Because of these tests and scientific dispersal data provided with Piper equipment, the new PA-18-A permits the pilot to apply chemicals at an extremely accurate rate.



## New Agricultural Chemicals are Especially Suited for Economical Application by Air

New chemicals, principally in concentrated liquid form, are ideally suited for aerial application and can be laid down most efficiently by air, with, of course, no damage to crops. For crop development and increased yield, chemicals are applied by air to fertilize, kill bugs and weeds, and defoliate. Seeding is also done successfully by air. In related fields, Pipers are widely used to prevent infestation and plagues, to debrush waste land and then apply seed. Weed and brush eradicating chemicals are also used to clear the rights of way of railroads and power lines.

In addition to many hundreds of Piper sprayers and dusters in use in the United States, fleets of Pipers are operating in more than 20 countries throughout the world. Most dramatic use of Pipers recently has been in the Middle East where these aircraft are successfully attacking the worst locust infestation of the last century. The photos below show the effectiveness of aerial application against the plague. Because of their low initial cost, negligible maintenance requirements, and operating dependability, Pipers are ideally suited for isolated areas.

### LOCUST CONTROL EFFECTIVELY ACCOMPLISHED WITH PIPER PLANES IN MANY LANDS



On the island of Madagascar, a fleet of Pipers is eradicating locusts. Here natives load Piper duster with insecticide.



Flying higher than for normal crop work, this Piper duster applies chemicals on locust-infested area of Madagascar.



These Piper Sprayers, operating in Pakistan, apply one gallon of insecticide per acre for 90% to 100% kill.



Dead locusts in Pakistan attest to effectiveness of aerial application by Pipers. Poison is effective for several weeks.