

A Cessna 340A with both a Robertson STOL System (R/STOL) and Vortex Generators

The Robertson High-Lift System for Cessna Twins was developed in the 1970's by the then Robertson Aircraft Company of Everett, Washington. The kit was generally called the Robertson STOL Kit. The Supplemental Type Certificate (STC) was acquired by Sierra Industries of Uvalde, Texas in the 1980's. Sierra marketed the kit under the name R/STOL.

In the 1980's and early 1990's, Sierra had a three-man team that could modify about 10-11 Cessna Twins per year. The costs, even then were substantial, ranging from \$19,900 for a 310 to \$33,000 for a 421C (1987 prices).

Due to the high costs of a R/STOL Kit and Sierra's strong Citation modification business, the R/STOL Kit installation business simply went away. Sierra still manufactures/stocks certain R/STOL System Parts. Components that were vendor supplied can be a problem locating.

The STOL System replaces the Cessna factory split flaps with Fowler type flaps. Fowler flaps extend rearward in addition to drooping. The increased wing area produces additional lift thus allowing the lower stall speeds and VMC. Since the take-off and approach speeds are based upon stall speeds, the reduction of stall speeds results in the lowering of take-off and approach speeds. The results are obvious, reduced take-off and landing distance.

The installation of Vortex Generators on the 340A also reduces stall speeds and dramatically reduces VMC. Additionally, installation of Vortex Generators allows for a gross weight increase of 300 pounds. The resulting 300-pound increase to useful load is essential to the 340A.

Here again, reduced stall speeds allow for safer slow flight with corresponding reductions of take-off and landing distances. With practice and proficiency, a good pilot can reduce take-off and landing distance 25% with VG's on a 340A.

When a C-340A has both a R/STOL Kit and VG's installed, you essentially have a "hybrid" aircraft. Fully FAA certified, this combination offers the best performance from each system. The additional lift provided by the Fowler flaps of the R/STOL Kit in combination with the improved aileron and rudder authority obtained from the Vortex Generators, combine to reduce stall and VMC speeds.

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Page Two

The take-off and landing performance derived from the R/STOL system is superb and the reduction in VMC, with VG's, from 82 KIAS to 71 KIAS is spectacular. This reduction in VMC, with the critical seconds gained in a true engine failure on take-off emergency, are more than worth the cost.

A Cessna 340A equipped with both a R/STOL Kit and VG's provides the demanding operator with the below improvements and benefits.

- Reduced stall and VMC speeds
- Slower take-off and approach speeds
- Shorter take-off and landing distances
- Reduced Accelerate-Go and Accelerate-Stop distances
- Gross weight/useful load increase.
- Expands load lifting capability at high density altitude airports
- Opens numerous short runway/high elevation airports to the 340A
- Reduces tire and brake wear
- Allows for reduced power take-offs from long runways
- Improves control both M/E and S/E
- Allows for precision approaches to "critical" landing areas
- Added value to aircraft

NOTE: The above comments are based upon a 310 HP powered 340/340A.
Performances may be different with modified engines.

For additional information on the performance of a C-340A, or other questions regarding R/STOL Systems, Vortex Generators and Cessna Multi-Engine aircraft, contact Jerry Temple Aviation, Inc. at (972) 712-7302 and visit www.jtatwins.com.



ROBERTSON HI-LIFT SYSTEMS ADD A DISTINCTIVE DIFFERENCE FOR 340 TWINS

IN PERFORMANCE

- Reduces takeoff distance over a 50-foot obstacle by 26%.
- Reduces liftoff speed by 11%.
- Reduces accelerate-stop distance by 1140 feet.
- Adds fun and excitement to your flying.

IN SAFETY

- Lowers single-engine control speed (Vmc) by 8 KCAS.
- Reduces stall speed by 5 knots. Lower stall speeds with flaps in takeoff or landing position lengthen decision times during flight operations near the ground.
- Developing the Advanced Technology Hi-Lift Safety and Performance Systems, Robertson engineers and pilots have worked closely with the Federal Aviation Administration in exhaustive analysis, structural substantiation and flight testing to guarantee the airworthiness and safety of each installation.

IN PRODUCTIVITY & FLEXIBILITY

- Opens thousands of short and/or high airfields previously inaccessible with confidence and a degree of safety not available on a standard 340 twin.
- Permits operating into airfields closer to your job site or vacation destination that would be marginal without the Robertson Hi-Lift System.
- Expands load-lifting capability at high-density altitudes to help avoid off-loading payload and to reduce fuel stops.

IN VALUE

- Increases value at resale or trade-in time by 75 - 80% of the Robertson System's cost.
- Affords the unique and savored feeling of flying "the best" — a unique aircraft like few others.

IN COST SAVINGS

- Quicker liftoffs and softer touchdowns reduce wear and tear on tires, brakes, wheels and structure to reduce maintenance costs substantially.
- Reduced-power takeoffs when long runways are available, extended engine life and cut routine maintenance expense.
- Time and money-saving procedures available to Robertson owners for operation around major airports are detailed in a special bulletin, "How To Save Time & Money With ROBERTSON."

You get a bonus from the added performance of a Robertson-equipped 340 twin. Sure — you lift off quickly and climb steeply out of short grass strips or unimproved runways. You expect that kind of performance with a Robertson. But, Robertson's Hi-Lift Performance delivers a bonus of safety. Slow-speed capability makes flying safer four ways. . .

1. Because Robertson Hi-Lift Systems let you fly slower during the critical liftoff and touchdown phases, you can react to gusts, change glideslope or adjust alignment with the runway over a longer time span. A Robertson System stretches time . . . events happen in slow motion.
2. With single-engine control speed (Vmc) only 6 knots above stall and lower than liftoff or approach speeds, you can be assured of control even if one engine quits.
3. Sharp control during slow-speed flight assures confident handling close to the ground.
4. Slow-flight reduces injury hazard in the unlikely, but always possible, case of a forced landing under adverse conditions.

NOTICE: Flying a Robertson-equipped 340 twin could change your concept of flying. A Robertson-equipped 340 will feel like a tame pussycat after flying a standard 340.

Now's the time to LIVE A LITTLE! Fly the best . . . fly a Robertson-equipped 340.



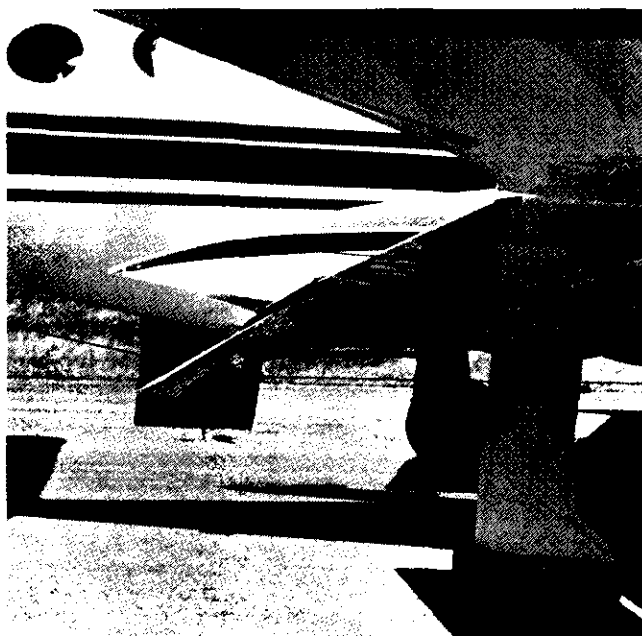
TECHNOLOGY: HOW ROBERTSON MAKES IT HAPPEN

Flying slow with confidence calls for more lift from less airflow around the wings. Robertson achieves an impressive increase in lift for 340 aircraft by removing standard Cessna split flaps and replacing them with all-new Fowler-action flaps. New flaps travel rearward on bearing rollers in tracks to increase wing area by 25.3 square feet. With flaps at the preselected 10-degree takeoff position, wings generate added lift

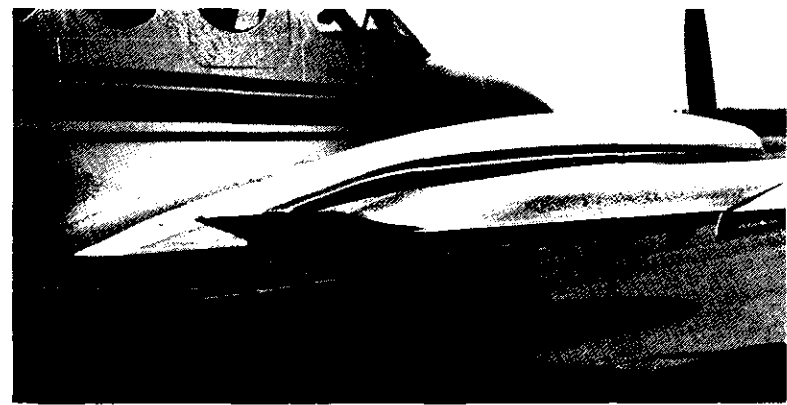
with minimum drag. Airflow from props generates more lift from the longer chord and greater camber of the modified wing section on both sides of the nacelle. Because the Fowler flaps generate comparable lift at slower airspeeds, a Robertson-equipped 340 climbs at a steeper gradient. Climbing at the same rate while covering less distance results in a steep climb gradient to clear obstacles at the end of short fields. Or, taking off with reduced takeoff power when long runways are available saves wear and tear on engines while flying usual takeoff profiles.

Similar benefits from low-speed lift aid landing approaches and touchdowns. Instead of approaching at 94 KTAS in a standard 340, for example, a fully loaded Robertson 340 approaches at 79 KTAS as a result of the sharply lower certified stall speed.

At the preselected 30-degree flap approach position the Robertson wing generates more lift than in the 10-degree takeoff position but with increased drag. By adjusting power to control the glideslope, a pilot can touch down with precision time after time. Sharply lower stall speeds result from the all-new Fowler flaps.



At the preselected flap takeoff position (10-degree deployment), the aft movement of the flap adds 25.3 sq. ft. of wing area.



During cruise the Robertson Fowler-action flaps tuck neatly under the wing.



For landing, the flaps translate to their maximum aft position, 30 degrees for maximum lift.

SCHEDULING YOUR 340 TWIN

Complete Hi-Lift System installation on your 340 aircraft will be accomplished within 15 working days. A prior space reservation is required to assure on-time completion. Cost-only pickup and delivery to and from your airport can be arranged if desired. To schedule your aircraft, call toll-free to Robertson Aircraft Corporation.

TAKING DELIVERY

Upon accepting delivery of your Robertson Hi-Lift 340, you are provided with complete complimentary dual flight familiarization to help you gain maximum utilization from the Robertson Hi-Lift System.

FINANCING AVAILABLE

Installation of Robertson Systems on new or used aircraft may be financed at low interest rates over extended periods. Financing is available even if the aircraft is not fully owned.

AIRCRAFT SALES SERVICE

For many years Robertson has been buying and selling new and used aircraft for our customers — worldwide. Because of our volume buying power we are able to provide the best aircraft new or pre-owned at the most attractive prices. Call our Aircraft Sales Department BEFORE you make the decision on your next aircraft purchase.

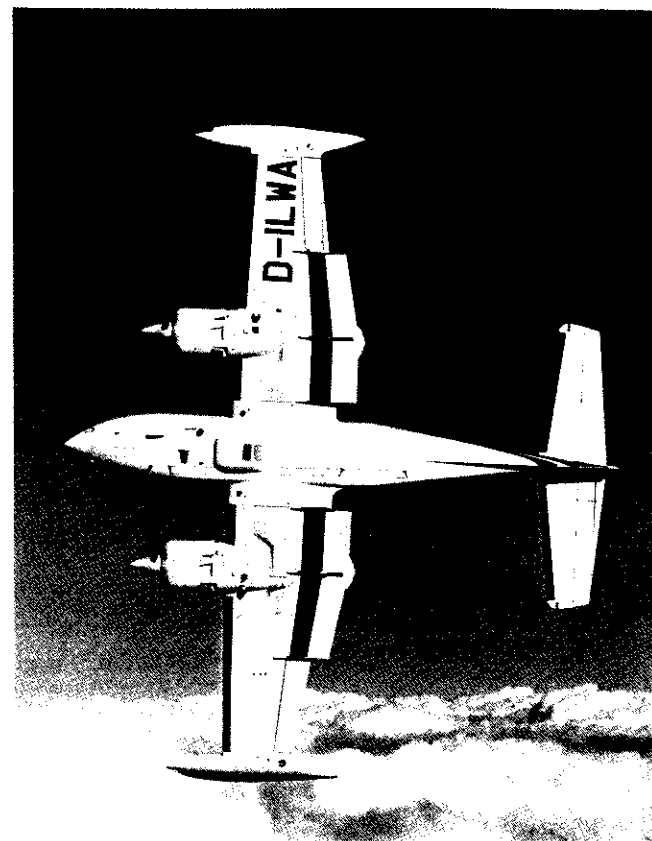
PERFORMANCE SPECIFICATIONS — 340

	Standard	Robertson
Gross Weight	5,990	5,990
Takeoff		
Distance Over 50' (Feet)	2,180	1,610
Liftoff Speed (KIAS)	91	81
Climb		
Over 50' (KIAS)	91	81
SE Best Rate (KIAS)	100	91*
SE Control Speed (V _{mc} - KIAS)	82	74*
Landing		
Approach Speed (KIAS)	94	79
Distance Over 50' (Feet)	1,850	1,360**
Accelerate-Stop Distance (Feet)	2,940	1,800

*With takeoff flaps

**Based on V_{mc} of 74 KIAS

Performance specifications subject to change without notice



ROBERTSON
STOL

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