

# INSTALLATION OVERVIEW

## STC SA02757CH

### INSTALLATION OF Model -E Elevator Drawing 415-22037

Univair (ERCO) 415-C, 415-CD, 415-D Aircraft



Model -E Elevator Installation

### Introduction

This STC was developed in order to improve the handling, landing performance and safety of certain Univair (ERCO) 415-C, - CD, -D aircraft through the installation of the later Model “E” split elevator assembly (Drawing 415-22037) and Low Speed Warning Cushion (Drawing 415-52025).

This installation improves the slow speed handling and landing performance of the aircraft without sacrificing the anti-spin characteristics of the design.

## **Project Description**

Beginning in 1948, Erco introduced the Model – E, which incorporated a newly developed split elevator installation, drawing 415-22037. This newly developed Model – E elevator installation reduced the elevator area by roughly 30%; increased the up travel to a maximum of +20 degrees and added a (soft stop) Low Speed Warning Cushion, drawing 415-52025.

This change allows the pilot to fly the aircraft normally, with the elevator up travel striking a soft stop at approximately +13 degrees of up travel, thus preserving the anti-spin characteristics of the design. As the pilot proceeds to approach a landing, the elevator control can be pulled through the Low Speed Warning Cushion (soft stop) allowing up to +20 degrees of up elevator, for use during the round out and flare.

## **Recent Developments**

The Model -E elevator installation has proven to be effective. It remained the standard elevator installation until the flight controls were change by Mooney on the M10 Cadet, in the 1960's.

With the advent of the Sport Pilot and Light Sport Aircraft (LSA) rules, the interest in the Erco 415 series aircraft has heightened and the number of owners modernizing their aircraft has increased, while at the same time the availability of mechanics and FAA personnel willing to accomplish this modification and authorize it through the FAA field approval process has decreased.

## **Required Changes**

This effort will require that candidate 415-C aircraft be modified, if not previously accomplished, to include an elevator trim tab control system. Univair Installation SK-4.

The modification of 415-C, -CD and –D aircraft will include installing an “E” elevator assembly (415-22037), center hinge (415-22038), elevator control arm (415-52024), spring (415-22026) and link (415-52027); plus attaching hardware to complete the Low Speed Warning Cushion.

## **Airframe Qualification**

The aircraft is a Univair (ERCO) Model 415-C or Model 415-CD or 415-D.

The aircraft is to have a standard airworthiness certificate in the Normal Category.

The authorized aircraft serial number range is: SN 113 through 4868.

The aircraft has been upgraded to a TCDS approved C85-12 / C85-12F engine and propeller combination.

Previous modifications or applied STC's do not preclude the installation of this STC.

## **Required Installation Parts**

Note: Parts may be sourced as removed from the existing installation, salvaged parts or new production items.

Part Number	Description	Quantity
	Elevator Installation	
415-22037 or F-22037	Assembly Elevator –Model - E	1
415-22007 or F-22007	Hinge Elevator Outboard Reusable from previous installation – 6 bolt design	2
415-22038 or F-22038	Center Hinge – 16”, 28 bolt design	1
	Control and Low Speed Warning Cushion Installation	
415-52024 or F-52024	Pushrod - Elevator	1
415-52026 or F-52026	Spring – Low Speed Warning	1
415-52027 or F-52027	Link – Low Speed Warning	1
		1
	Trim Tab Installation	
415-52274 or F-52274	Trim Wire Conduit – Rear	1
415-52070-33 or F-52070-33	Trim Wire	1