

# Historic Lotus



Jim Clark OBE 1936-1968  
Two times F1 World champion plus Indy 500 winner 1965

**THE MAGAZINE OF THE HISTORIC LOTUS REGISTER LTD**  
Incorporating Club Elite Mark 14 Ltd

**NO.92 SPRING 2018**

*Reprinted with permission*



# Elite #1559

## Evidence for a historical Elite

**Foreword** *It is always intriguing to read the various articles in the magazine and appreciate just how many experts and unsung heroes there are amongst the membership of the HLR. The following article is no exception, penned by Doug Fraser.*

*The article came with a comment that the author Doug, although a registered professional engineer in the fields of mechanical and electrical engineering has no actual degree in engineering. However on his office wall in pride of place hangs an award for naming the most parts of various Lotus at the Log 14 (The largest annual gathering of Lotus enthusiasts in the US) competition. Albeit that he feels that it was won with no small contribution from his wife Suzy who wrote, for a difficult to identify component, "it had clearly fallen off of an alien spacecraft and been retrieved by Chapman while he was in the parking lot nipping components off of his employees Morris Minors in order to deliver some vehicle to a customer". Sometimes we all need a bit of help!*

*On the subject of help the article does call for some input from past engineers who worked on Elites back at Cheshunt or those familiar with this particular car/Chassis...comments please.*

*Talking of help, I can't leave out the fact that not only is Doug Fraser a Research Engineer and Director of Formula Hybrid [Douglas A. Fraser, P.E. SAE, IEEE Life Member ] but he was also awarded the 2010 Carroll Smith Mentor's Cup by Formula SAE® and the Sports Car Club of America (SCCA)*

See link:

<https://engineering.dartmouth.edu/news/doug-fraser-awarded-2010-carroll-smith-mentors-cup> The highest award that can be earned by any Formula SAE® advisor, who has demonstrated a long time commitment to mentoring FSAE students.

*Which is well worthy of note in itself, hence my adding it. Ed*



The photo of Elite 1559 from the sales listing

Figure 1 - Photo of Elite 1559 from the sales listing

The Lotus Elite has held a special appeal for me since the early 60s when I first saw the mesmerizing "Beware of the Lotus-Eaters" advertisement. I owned

an Elite (1113) in the early 70s but, being in my early 30s with two young children, an Elite was not the most practical vehicle and I sold it. However, I never lost interest in the Elite and seized the opportunity to purchase another when I saw an intriguing ad in Hemmings Motor News.

This particular Elite captured my attention for several reasons: it was a project of about the right magnitude, it appeared to be complete, and it had a Lotus Twin Cam engine in it.

In the advertisement, the seller was suggesting that this just might be a factory-built twin cam.

To quote from the advertisement: "Is this one of those cars that David Lazenby produced.... you be the judge".

However, I assumed that car had been around long enough for the previous owners to figure this out and, if it really was that special a vehicle, they would have known it and would be saying so.

Although the possibility was intriguing, I would have bought the car anyway. I loved the Elite and liked the idea of the Twin Cam. I'm well acquainted with the Ford-based engines, having collected five national championships as a Formula Ford engine builder in the 60s and 70s so I was prepared to take on even a seriously rusty twin cam.

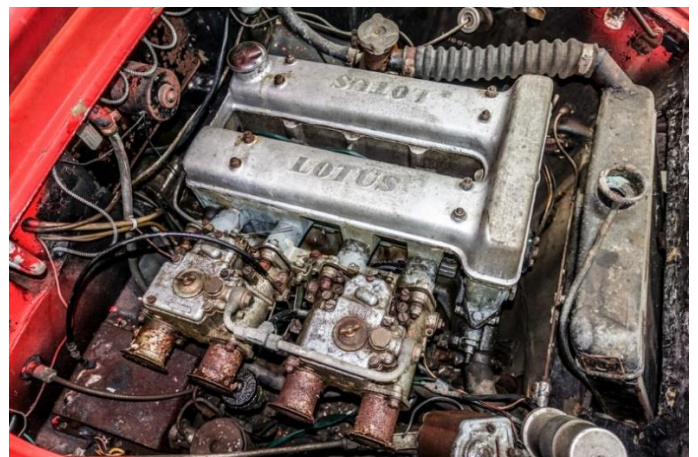


Figure 2 - A view of the engine from the sales listing

## The Engine Number

The biggest mystery about #1559 was the engine number. Warren King's invoice pages, which are generally accepted to be the authoritative listing of Elite chassis and engine numbers, listed #1559 with an engine number of "31." However, this number did not fit the typical numbering sequence for either the Climax FWE or Lotus twin cam engines

1504	4141	ELC 1019	2/2/61	Elite Cars
1506		ELC 1060	2/2/62	Donington Works Co.
1507	9175	ELC 1114	2/11/61	Elite Cars
1508	9569	ELC 1012	2/12/61	Elite Cars
1509	31	ELC 1006	19/12/63	R. T. Russell
1510	10813	ELC 1206	13/6/63	Spanke
1512C	10832	ELC 1219	24/7/63	Lotus Sales Ltd.

Figure 3 - The Warren King invoice page showing chassis #1559



In fact, Dennis Ortenburger simply omitted that engine number from the chassis and engine number listing in his 2002 book: Lotus Elite – Racing Car for the Road.

1555 S2	9191	SWEDEN	LOFGREN T.	161E
1556 S2	-	USA	-	161E
1557 S2	9175	USA	-	1617
1558 S2	9569	UK ENGLAND	ANDREWS W.B.	161E
1559 S2	-	USA	-	161S
1560 S2	9724	UK ENGLAND	-	1621
1561 S2	10266	GERMANY	AUER H.	1621
1562 S2	9185	BELGIUM	-	1621
1563 S2	10473	AUSTRALIA	DEMSEY T.	1621

Figure 4 - Chassis - Engine list from Ortenburger's 2002 book

However, there were other clues that 1559 might be a unique vehicle

Warren King's invoice pages indicate that #1559's Chassis-Body Unit (CBU) was delivered to Cheshunt some time before December 1961, but the car wasn't delivered to a buyer until December 1963. This raised the question: what was #1559 doing for two years at Cheshunt?

Some experts believe that the final page of Warren King's collection is a list of remaining inventory requested by Colin Chapman after he decided to "clear out" the remaining Elites.

#1559 is on that list with the designation "CC." One interpretation of the CC is that it stands for "Company Car."

Was #1559 an experimental engineering vehicle? Was it the Cheshunt Mule?

9 FK	1572 F	ELC. 710, 711, 712
6 X CBU	1559 CC	27/5/60
2 FK	1526	

Figure 5 - Unsold Inventory list? Company car?



Figure 6 - #1559 being loaded in South Carolina

## #1559 arrives in Vermont

On November 23, 2016, Lotus Elite #1559 arrived in Fairlee Vermont, still bearing its front Michigan License plate from 1971.

The first thing I did after the car arrived was to look for the engine number, but I could not see anything on the R/H engine mount where Ford engine blocks are usually stamped.



Figure 7 - This is where the serial number is normally located.

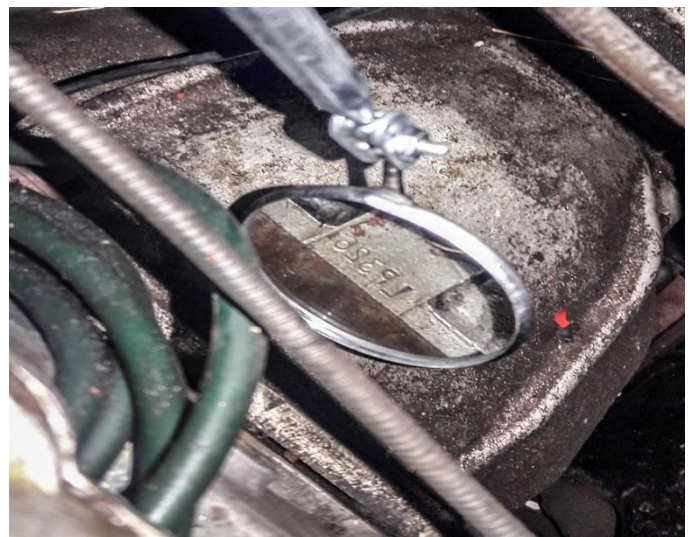


Figure 8 - The engine number on the back of the cylinder head

However, using a mirror, I could see the number "LP326" stamped in the back of the cylinder head.

It turned out later that the number on the engine boss was indeed there – LP326 – it was just stamped so lightly that it could barely be seen. So, the engine number 31 shown in the King invoice page remained a mystery.

As I continued to examine the car, a number of other interesting features began to emerge.

The Lucas taillight assembly that I assumed had been absent mindedly left by the shift lever was, in fact, a permanently mounted, low engine oil pressure warning lamp.





*Figure 9 - The low oil pressure warning light*

Behind the oil pressure lamp was a liability disclaimer plaque with wording that would have rendered the car essentially useless for attracting young ladies.



*Figure 10 - The liability disclaimer*

The differential mounting had been modified extensively utilizing a rubber-isolated steel subframe.



*Figure 11 - The sub-frame/rubber mounted differential*

## **Moving on**

At this point, I began to dismantle the car in preparation for restoration. I documented and photographed every- thing as I went. At this writing - Feb. 14, 2018 - I have accumulated over 2,000 images of #1559.

## **Engine number 31!**

The most significant discovery occurred early on, when I removed the carburetors and saw the number "31" stamped into the side of the engine block!



*Figure 12 - Engine number 31*

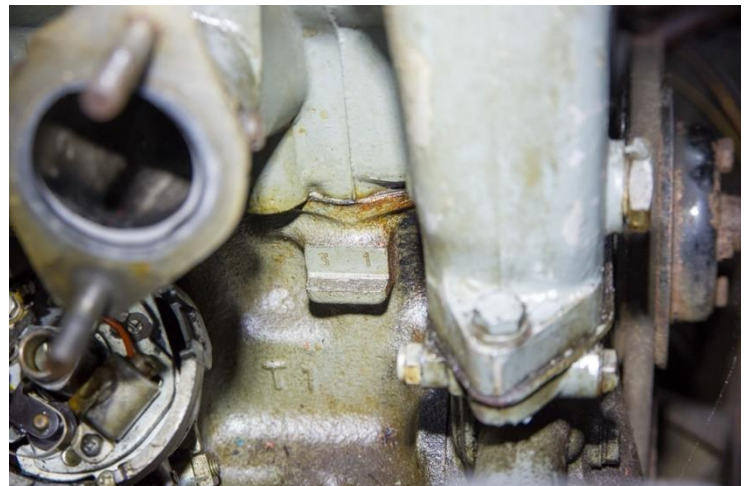
But why did they record that number as the engine number?

One possibility is that when the car left Cheshunt, they were unable to find the engine number stamped on the mount boss, so they recorded the only number they found.

A more plausible theory is that they didn't bother to look anywhere else. The '31' was located in the same location that a Climax FWE engine number is normally found, so if they were looking for an engine number on the forward right side of the block, they would have found one.

Furthermore, knowing that the engine was a very early example, a serial number of 31 might not have seemed all that implausible.

I have seen similar numbers stamped in this location on many early Ford blocks. I suspect that they may have something to do with shimming during the line bore process. But regardless of how it got there, 31 became 1559's engine number.



*Figure 13 - The location of the engine number*



## Stephen Goss

Another significant discovery occurred while searching the Motor Sport Magazine archives. (I've been doing that sort of thing a lot lately.)

We found this letter to the editor in the March 1984 Issue:

### Elite Ford ?

Sir,

For historical accuracy I am trying to obtain corroboration that Lotus produced at least one old style Elite with the Ford Lotus twin-cam engine.

In 1963 I was often at the Cheshunt factory and eventually bought a Lotus Seven (reg DMP 7A). At that time almost as a joke I was offered a works Lotus 16 formula one car for the same price as the Seven (!) or for £100 more the prototype Elite Ford. I remember it as red with a large red low oil pressure light on the dash.

I have also seen an advertisement in MOTOR SPORT in the last five years from one of the larger sports car dealers offering a twin-cam Elite.

Perhaps one of your readers could help by adding further details to my memory.  
Miami STEPHEN C. GOSS

Figure 14 - Letter to the editor, Motor Sport Magazine March, 1984

We located Stephen Goss, and after examining photos and other data, he has said that #1559 is probably the car he had seen at Cheshunt (it was 54 years earlier), and he was also able to confirm that the factory representative had referred to the car as the "Prototype Elite Ford."

## Miles Wilkins

Miles Wilkins, author of the book Lotus Twin-Cam Engine in 1988 which is considered by many as the 'bible' on this engine, in which it is written:

"Other interesting work carried out at Cheshunt included a one-off redesign of the Elite rear suspension based on a Jaguar rubber system (this was done by Brian Luff in 1962)—apparently if felt like driving jelly and was not a success. Victor Grimwood, who stayed with Lotus, carried out a private 1558 cc conversion to his elite in 1963."

This paragraph caught my interest. I have not seen mention of an Elite "subframe-mounted differential" in any other publication and he mentioned the twin cam installation as well. I contacted Miles to ask him about this entry in his book. After speaking with him initially, I sent a package of photographs and other data I'd accumulated.

The second time we spoke, he confirmed that #1559 was indeed the car that Brian Luff had done the differential modifications on. "Just for a bit of fun to see what's what." He also said that Victor Grimwood had performed the twin cam installation on the same car.

Miles then offered this somewhat unsettling advice: "Enjoy it — the back end will be a bit wobbly but never mind ... there was only one ever done by Brian Luff and you've got it. Well done. Look after it and enjoy it."

## Was #1559 the Cheshunt Mule?

There are some things about #1559 that I feel are now established. First, that Elite #1559 remained at Cheshunt for two years. Second, that it was sold in December of 1963, fitted with the twin cam engine that is still in the car.

According to the component dates, the engine and transmission were added late in #1559's tenure at Cheshunt, very shortly before the car was sold.

However, it is irresistibly tempting to speculate whether #1559 might have been the twin cam Elite that was said to have predated Lazenby's 1967 conversion to Elite #2001. There are several references to that early twin cam in the motoring press, the best-known being the article in the January 1968 issue of CAR magazine by Nick Brittan. There have also been mentions of the car by Chris Harvey (Lotus: the Elite, Elan and Europa) and Julian Balme (Classic and Sportscar Magazine - July 1995).

There are two elements that are common to all three descriptions. First, that the conversion was seriously rushed per directive from ACBC, and second, that the project was abruptly abandoned.

## Was the twin cam installation in #1559 rushed?

A subtle but significant clue that the installation was done in a hurry are the three 5/16" x 4" UNC bolts shown below.

The oil pump was spaced out 2 3/4" from the block to avoid interference with the steering column, so it required longer bolts. When I removed the pump from the engine, it became apparent that the bolts holding it on had been fabricated by welding shorter pieces together! This would imply that they didn't have 4" bolts on the shelf and weren't given the time to order them.



Figure 15 - Fabricated oil pump mounting bolts



Another indication that the conversion was done in a hurry was that the shaft from the oil pump drive gear to the pump rotor had been cobbled together using two standard (i.e. too short) Ford oil pump shafts. The shaft on the pump end had been slotted and was driven by a tongue machined into the engine side shaft.

I had first assumed this had been done to compensate for potential misalignment between the bores in the pump body and the aluminium spacer, but that alignment was near-perfect.



*Figure 16 - Oil pump drive "slot"*

So my conclusion is that they didn't have time to order an appropriate length of shafting either.

I have since replaced the cobbled together parts with a single shaft, and will sleep better at night.



*Figure 17 - Bifurcated shafts, and the replacement one-piece shaft*

### **Was the project abandoned right after completion?**

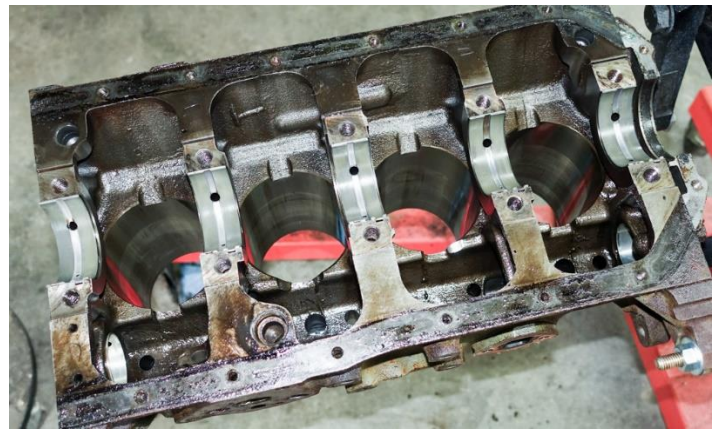
There are two indications that further development of the twin cam installation in #1559 was not pursued.

First, the suspension components are still standard Series 2. If Lotus had decided to continue development of the car, one would think that they would have opted for stronger front springs or a heavier anti-sway bar to compensate for the added weight in the front.

The second clue is that the engine internals were essentially "as new." There were as close to zero miles on this engine as anything I've ever seen. The only apparent "wear" was the result of the car having been parked for 47 years.

When I rebuilt the engine, it required only honing the bores, new rings, gaskets and seals plus lapping the valves.

The engine now has a couple of hours on the dyno, producing very close to 105 Hp.



*Figure 18 - Internals of #1559's engine*



*Figure 19 - 1559's engine on the dyno*

### **Philosophy**

I have made very few changes to the car during its on-going restoration and have attempted to keep the car as original as possible.

The only significant change was to redesign the lower mounting brackets for the differential stabilizer rods. The exhaust now routes normally, rather than hanging below the belly of the car. (See Figure 11)



*Figure 20 - Relocated lower stabilizing rods.*



The upper radiator connection was redone to get rid of the ugly corrugated hose that can be seen in Figure 2.

The water temperature sensor capillary now emerges from the left-hand side of the firewall instead of looping behind the engine.

Apart from these, the car is essentially unchanged from the way I believe it might have left Cheshunt.



Figure 21 - Engine compartment with improved radiator piping.

## Missing History

There is still a frustrating six-year gap in the history of #1559, and it is my hope that some readers may be able to help fill it in.

According to Warren King's invoice pages, the car was delivered to R. J. Fuller on December 19, 1963. It was imported into the U.S. by Joe Charette from Monroe, Michigan sometime before 1971.

Where it was between leaving the factory and arriving in the U.S. is unknown.

It carried a 1964 Northamptonshire registration number ABD 789B, but inquiries to the UK archives have not uncovered any record of that number.

Efforts at locating R. J. Fuller have not been successful.

Figure 22 is a tantalizing classified advertisement from the July 1970 issue of Motor Sport Magazine – just about the right time to have the car arrive in the U.S. by 1971. (And yes, #1559 had received a rather tatty respray at some time in its past). But no luck attaching a name to the phone number.

forces sale. Front offside wing and suspension and steering damaged, otherwise immaculate. Stage 1 engine, gearbox rebuilt, wide wheels, new half-shafts, rear suspension, hood, tachometer, uprated final drive. All bills available. Whole or broken for spares. £150. Newell. Tel.: Durrington Walls 294/5. (4400)  
**LOTUS ELITE TWIN-CAM, 1962. BRISTOL** body, Ford close-ratio gearbox, 165 x 13 G800s; recently resprayed. £650. Tel.: Hingham (Norfolk) 254. (4401)  
**GINETTA G15. MOONSTONE WHITE.** Sun roof, alloy wheels, radials, heater, mileage under 4,500; first registered Feb., 1970; taxed to Jan., 1971. £900. Tel.: Leeds 38391 (day), Wetherby 2992 (evening). (4402)  
**AUS1** soft-to uphol: 73103.  
**EXCE** with n taxed full hi 20 Car **D.B.4** drive.  
**AUS1** overdr: owner (July). conn: 2345.

Figure 22 - Classified ad from July 1970 Motor Sport

An interesting aside is that the Lazenby twin cam was offered for sale in the Motor Sport Magazine classifieds in November of 1970 (for £895) and again in August of 1971 (for £950). It was clearly identified as such in both advertisements.

## The Future for #1559

The restoration of #1559 is proceeding apace. The car would be drivable, were it not for Vermont winters. However, this provides an opportunity to take extra time on the interior and other cosmetic elements of the car.

I'm looking forward to picking up where the factory left off on #1559. My goal is to drive it "as done" for a while (carefully, of course) and then address the "wobbly" rear end and the likely oversteer.

Lazenby was reportedly quite successful in making his car handle well. This gives me cause for optimism.

With special thanks to Jim Goodman, Kirk Lockwood, Don Christopher Nick Adams and the denizens of the Lotus14 group on Yahoo, for their invaluable contributions and amazing knowledge of early Lotus cars.

*Doug Fraser*

# Addendum

September 10, 2019

Since this article was published in the Spring of 2018, there have been some additional developments.

## Victor Grimwood

We discovered that the owner of the phone number listed in the classified advertisement (Figure 22) was Victor Grimwood. Note that Grimwood was the Lotus employee identified by Miles Wilkins as having performed the Twin Cam conversion on #1559.

Although Joe Charette, who imported #1559 into the U.S. is deceased, it is extremely likely that this would have been the advertisement that drew his attention to the car.

## Stephen Goss

We made further contact with Stephen Goss, who wrote the letter to the editor shown in Figure 14 in which he described having seen the “Prototype Elite Ford” at Cheshunt in 1963.

Stephen joined us at the Lime Rock Historics in the fall of 2018 where #1559 took a best-in-class award at the Concours.



Figure 23 - Stephen Goss explaining the nuances of #1559 to the judges

The award may have been influenced by Stephen, who is seen here telling the judges about having seen the car at Cheshunt in 1963.



Figure 24 - Stephen Goss chatting with David Hobbs



Figure 25 - #1559 receiving a trophy for being First-in-Class.