

## **SOUTH SHROPSHIRE ENGINEERING AMBASSADORS**

### **END OF YEAR REPORT – SCHOOL YEAR 2021-2022**

This report records the activities of the South Shropshire Engineering Ambassadors during the school year ending July 2022. South Shropshire Engineers are a voluntary association of mainly retired professional engineers providing support in the promotion of engineering and other STEM subjects in primary schools in South Shropshire. We provide after school clubs in some of the schools, we support schools in the assembly and competitive racing of Goblin cars and we arrange visits to places of engineering interest. We are also available to support the Design & Technology department of the Bishops Castle Community College in administering an annual engineering challenge for the local primary schools.

The report is prepared for the members of the group, as well as for the agencies which very generously support our activities with grant funding.

#### **SCHOOLS SUPPORTED DURING THE YEAR**

- Newcastle Primary School – Goblin Car Assembly
- St George’s CE Academy, Clun – Engineering Club, Goblin Car Assembly
- Bishops Castle Primary – Engineering Club, Goblin Car Assembly
- St Mary’s School, Bucknell – Goblin Car Assembly
- Norbury & Chirbury Primary Schools – Goblin Car assembly
- Lydbury North Primary School – School Visit to Enginuity
- Onny Primary School – Goblin Car Assembly
- Stokesay Primary School, Craven Arms – School Visit to Enginuity
- Wistanstow Primary School – School Visit to Enginuity

#### **ACTIVITIES CARRIED OUT DURING THE YEAR**

##### **School Engineering Clubs**

After school engineering clubs were arranged during the Autumn term 2021 at both St George’s School, Clun, and at Bishops Castle School. That term, the schools were in the process of resuming normal hours and activities following the Covid 19 pandemic. However, because of the outbreak of the very virulent Omicron variant during the latter part of the term, both schools were closed to outside visitors, so the engineering club meetings were of necessity curtailed. Just four meetings were held at Bishops Castle school and only two at Clun. During the meetings that were held, the children, in Years 5 & 6, were introduced to the first principals of engineering, illustrated by the use of K’nex building sets.

##### **Goblin Car Assembly**

Assembly of the G1 Goblin cars, i.e. those having the tubular steel chassis (see illustration), was carried out at Newcastle, Bishops Castle, Bucknell and Onny schools. The more recent

G2 Goblin cars, having a monocoque chassis design, were assembled at Clun and at Stiperstones School, for Norbury and Chirbury.



G1 Goblin Car – Newcastle



G2 Goblin Car – Norbury/Chirbury

Children from Years 5 & 6 were involved in the assembly of the Goblin cars. The start of assembly in the Spring term 2022 was again delayed by the restrictions imposed by the Omicron outbreak, but all schools were in production by just after the half term break. The processes involved assembly of the chassis, fitting of the front and rear axles, the steering, the brakes, the motor, the battery and the electrical wiring, all processes giving the children a good appreciation of the essential elements of an electric powered car. The final process was the fitting of cladding to the vehicle and the painting and decorating of the vehicle to represent each of the schools. The vehicles were assembled in the classrooms within the school but were then taken out onto the school playground for trials and to allow individual children to develop their driving skills.

### **Goblin Car Racing**

Six of the seven Goblin cars that had been assembled came together for time trials held at the Community College, Bishops Castle, on Tuesday 24 May. Due to a prior commitment, Clun school was unable to attend on that day but instead it held time trials on its own playground the previous Wednesday, also attended by the team from Bishops Castle primary.

The time trials were held on the tennis courts at the Community College on which a suitable circuit had been marked out with cones. Each of the children in each of the teams was given the opportunity to complete at least one circuit and the start and finish times were recorded for each driver. The trials gave each of the teams the chance not only to pick out the best drivers for the race meet two weeks later, but also to test the reliability of their cars under repetitive use.

The race meet on 8 June 2022 was held at the Curborough Sprint Track, near Lichfield in Staffordshire. Again, only six of the seven Gobblins were able to make it to the event; Bucknell School had unfortunately already committed to an alternative engagement for the children on that day.



**15th Staffordshire Goblin Event**  
**Wednesday 8th June 2022**  
**Curborough Sprint Track**  
**By kind permission of the**  
**Shenstone & District Car Club**



**Kindly sponsored by KMF,**  
**IMechE (Midlands Region)**  
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INSPIRING ENGINEERS

A coach was hired locally to take the children from three of the schools to the event; the other three schools were able to use their own school minibuses. Two of the Goblin cars travelled in the luggage compartment of the coach but the others were transported separately by car and trailer.

The timetable for the day was as follows:

- 8.15 Volunteer briefing
- 8.30 Teams arrive
- 9.15 Scrutineering begins
- 10.00 Team briefings
- 10.30 Slalom & Drag events
- 12.30 Lunch
- 13.00 Sprint Race
- 15.00 Prize giving
- 15.20 Clear up

There were 32 cars at the event from a total of 24 schools coming from the whole of Staffordshire and Shropshire; several of the schools entered more than one car. Prizes were awarded as follows:

- Drag race winner & runners up

- Slalom event winner & runners up
- Sprint race winner & runners up
- Overall Champion

along with the following special awards:

- Best bodywork
- Greenest bodywork
- Best presented team
- Spirit of Greenpower award
- Portfolio award

Sadly, on this occasion, none of our teams came away with any of the prizes. However, Onny School was ranked third overall and was unlucky not to come away with a prize in two of the individual events. Clun, Chirbury and Norbury were ranked 15<sup>th</sup>, 16<sup>th</sup> & 18<sup>th</sup> respectively but again with good results in individual events. The other two schools, Bishops Castle and Newcastle, were lower down the rankings but, like all of the schools, had a very rewarding experience and were proud to show off their cars.



The Onny School team waiting to compete



St George's Clun team waiting to compete

### Schools Visit to Enginuity

A visit to Enginuity, an interactive design and technology centre in Coalbrookdale, Shropshire, part of the Ironbridge Gorge museum, was arranged for local South Shropshire schools not taking part in this year's Goblin events. The three schools able to take part were Lydbury North, Stokesay and Wystanstown. Because of a limit on numbers at Enginuity, the party was limited to 30, so only Year's 5 & 6 children were invited. Apart from the opportunity for the children to view the various displays at the museum, many of them of direct engineering interest, the Enginuity management laid on a dedicated activity to involve the children in making electric buggies.

The visit took place on Monday 27 June. A coach was hired locally to pick up the children from the three schools but unfortunately, because of a road closure at Coalbrookdale, the bus was only able to drop off the party at the main Ironbridge Gorge visitors' car park, a 20

minute walk from Enginuity. This limited the time available for the children to look around the various displays but the interactive workshop went ahead as planned. The children responded well to the challenge set by the workshop, some very effective buggies were created and were raced against each other and prizes were awarded to the winners. The children, many of whom had never been to Ironbridge Gorge before, returned home with a much greater appreciation of the remarkable heritage available within the South Shropshire area.

### **Displays at the Summer Shows**

As a means of advertising the work that we do, and to possibly recruit new members, South Shropshire Engineers arranged to have a show tent at the following local shows:

Sunday 26 June	Aston on Clun Steam & Vintage Show
Sunday 24 July	Purslow Show, Clunbury
Saturday 6 August	Clun Carnival & Show
Sunday 14 August	Clungunford Classic Motor Show

On display at the Group's show tent were photo displays of our past activities in the schools, various working models, some using solar power, interactive games to entertain the children and at least one of the Goblin cars. The show tents were particularly popular with children at the shows, some of whom had participated with us in their schools.

### **MANPOWER**

South Shropshire Engineers currently have just eight active members. Sadly, our past Chairman, Dave Clarke, passed away earlier in the year; his funeral was held at Hopesay Church on Saturday 21 May. He had been active over several years in leading the group and in organising innovative and productive activities for the Group; he is very much missed. We welcomed one new member during the year, Ron Church. Ron has been active during the year, along with Rob Loynes, in supporting the Bucknell School Goblin assembly.

Responsibility for the other Goblin assembly activities has been as follows:

- Bucknell school – Rob Loynes & Ron Church
- Clun school – John Garside & Richard Webb
- Newcastle School – Steve Blackman
- Bishops Castle School – John Alcock & Jim Halcro-Johnston
- Onny School – Robert Flitney
- Norbury & Chirbury Schools – John Alcock & Jim Halcro-Johnston

### **FUNDING**

South Shropshire Engineers are deeply grateful to the following principal donors who contributed generously to the Group's finances for this year:

- Aston on Clun Community Shop
- Institute of Mechanical Engineers, Shropshire Area Committee
- Ludlow Rotary

The funds made available to us by these very generous donations enabled us to provide the level of support that we were able to give to the schools to achieve our objective of promoting the engineering subjects within the South Shropshire schools.

**EXPENDITURE**

Purchase of Goblin spares, including three new batteries		£ 725.09
Coach hire to Curborough, including separate transport of Goblins	£ 535.00	
- Less coach passenger receipts	(125.00)	410.00
Enginuity – entrance plus cost of activity		234.90
Coach hire to Enginuity	370.00	
- Less coach passenger receipts	(239.5)	<u>130.50</u>
<b>TOTAL</b>		<b>£ 1,500.49</b>