



IAgrE Student Awards

NOMINATION SUMMARY



IAgrE CNH Industrial Award* / Student Project Award* Safety Award*

*please delete as appropriate:

PROPOSER: (usually Course Director/Head of Department)

Name: [Rhys James](#)

Position: Lecturer

University/College: Coleg Sirgar

Gelli Aur Camps,
Home Farm
Golden Grove
Camarthen
SA32 8NJ

Contact details:

Tel: 01554748583

Email: rhys.james@colegsirgar.ac.uk

DETAILS OF NOMINATION:

Name of Student/Group of Students:

William Evans

Personal contact details (i.e not college) to enable us to contact the student(s) once their course has ended:

01267281532

07957742051

Email: wilevs512@gmail.com

Name of course studied: Level 3 City and Guilds Extended Diploma in Land based Technology

Period studied

From: September 2023

To: July 2025

Qualification to be gained:

180 Credit extended diploma

Project Title:

Post knocker lig splitter adaption

Details of material submitted with nomination: (Project/Exec Summary/videos etc)

Powerpoint presentation

SIGNED BY PROPOSER: DR James

DATE SUBMITTED:

22/10/25

If you wish to provide any additional information to support this nomination, please do so in a covering letter. When complete, return this form, together with the supporting documents, to

The Secretariat, IAgrE, The Bullock Building (Bldg 53), University Way, Cranfield, Bedford MK43 0GH
secretary@iagre.org

NB All work submitted is treated with complete Confidentiality; no part of the paper will be published by IAgrE except for the Title and Name of the winner in each category.

William Evans

Level 3 Land Based Engineering
Project Unit 333
2025

Cefndir / Background

- Enw / Name - William Evans.
- O / From - Cynwyl Elfed.
- Ysgolion / Schools - Ysgol Gynradd Cynwyl Elfed, Ysgol Gyfun Gymraeg Bro Myrddin.
- Coleg Sir Gar - Peirianeg Amaethyddol, Undeb Myfyrwyr.
- Gwaith / Work - Dal Gwahaddod, Penfoel, Blaengofer.
- Profiad Gwaith / Work Experience - Wyna, Western Power / National Grid, Ysbyty Glangwili, Davies Implements LTD
- Clybiau / Clubs - CFFI Cynwyl Elfed, Dawnsywyr Talog, Aelwyd Cynwyl Elfed, St John Ambulance, Carmarthen Clay Target Shooting Club, Army Cadet Force.

Future Career aspirations -

British Army Combat Medical Technician

- Application - November 2024
- Assessment and Interview - January 2025
- Start of basic training - July 2025

Aims and objectives

- Investigate four initial ideas for your project based on land-based technology.
- By developing new ideas or modifying existing ones, already on the market
- Design and manufacture as selected concept and present my idea in front of a distinguished panel of judges

Research

- LAMMA 24/25
- Salon international de l'agriculture
- RWAS 24/25
- Davies Implements LTD
- Ffermydd
- Google
- Youtube
- Profi Magazine



Research

Survey of 20 Local Farmers -

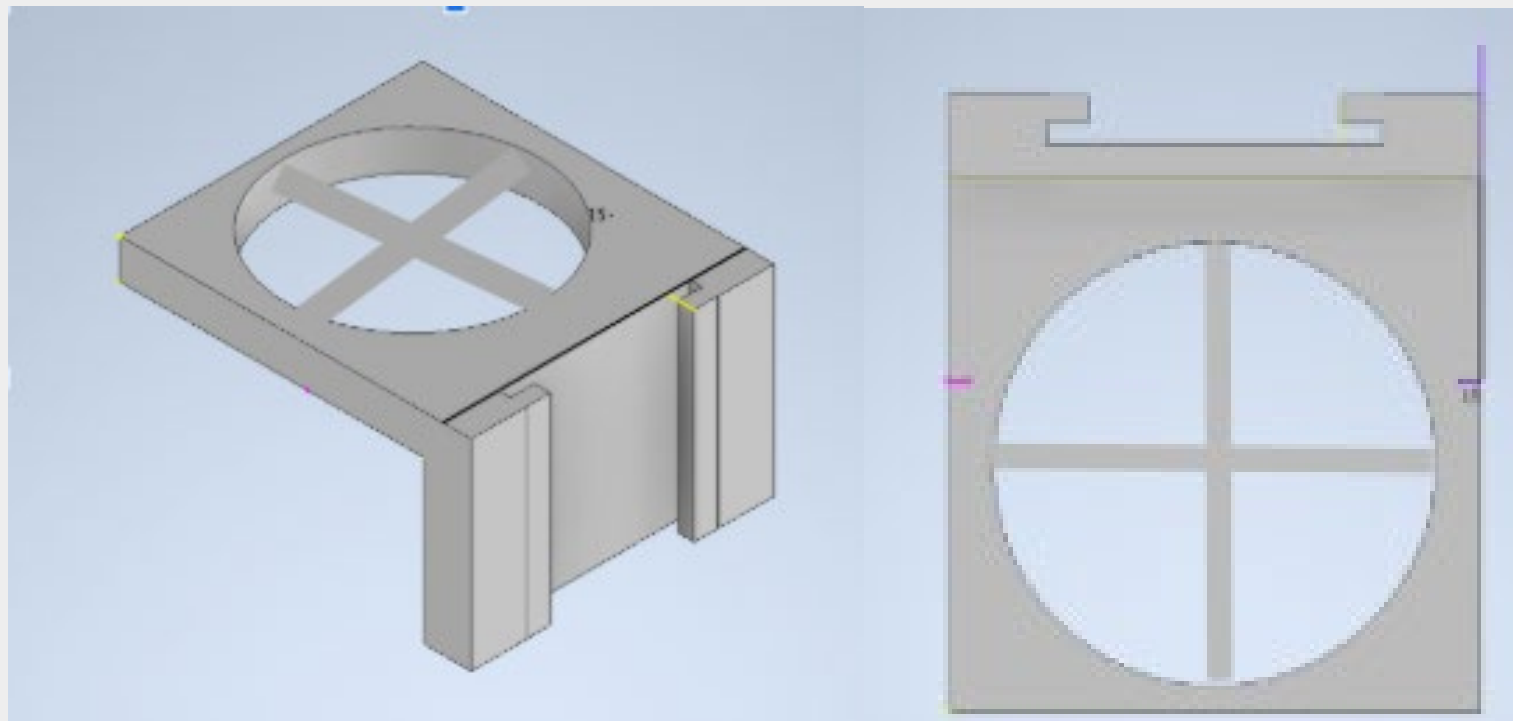
17 had post knocker,

9 had log splitter,

6 had both a post knocker and log splitter,

15 farmers with post knockers said they would be interested in an adaption.

Initial design



Risk Assessment



colegsirgâr

Peirianeg Amaethyddol /Agricultural Engineering
Asesiad risg / Risk Assessment

Hazard	Persons at risk	Existing controls	Risk rating			HIGH, MED, LOW,	Any additional control measures required.
			Likelihood	Severity	Total		
Explosions	Myself, others in the workshop and bystanders/ members of the public.	Gas bottles are to be chained or secured to the welding unit. All gas bottles that have been used or waiting to be used are to be kept in a cage outdoors. Ensure that fittings are properly secured to the gas bottles. The tap should be opened, listen for any leaks and monitor the pressure gauge to check that it hasn't dropped. Welding near flammable / combustible items such as fuel tanks and sealed components may cause these components to explode when heated.	2	5	10	MED	If welding in a public area, place signage around the area to make people aware that welding is in progress.
Dust & Fumes	Myself, others in the workshop and bystanders/ members of the public.	Ensure that the Local exhaust ventilation (LEV) is turned on and that There is adequate ventilation in the surrounding area. Ensure that correct head placement is followed whilst welding. Ensure All appropriate PPE is worn and an air line should be used in order to clean the welding area.	2	3	6	MED	If any welding is to be done in a confined environment an air fed mask is worn
Slips, Trips & Falls	Myself, others in the workshop and bystanders/ members of the public.	Work area should be kept tidy and tools and equipment should be kept out of walkways. Any spillages should be cleaned with absorbent granules and a spill kit if required. Make colleagues aware of where your work area is placed	2	2	4	LOW	Use signage and tape to secure the area if working out doors.
Crushes & Knocks	Myself, others in the workshop and bystanders/ members of the public.	Awareness of manual handling limitations regarding weight of components. Anything over 25kg should be moved by multiple people or with lifting equipment. If using any vises / jigs / hammer and anvil, be vary of hand placement when using them. Be aware of farm traffic when carrying materials across the yard.	2	2	4	LOW	
Cuts & Splinters	Myself, others in the workshop and bystanders/ members of the public.	Beware of any burrs or sharp edges on metal. Gloves should be worn and grinders or files can be used in order to prepare the metal correctly. Ensure that workers are confident and competent and that the correct guards are in place.	2	2	4	LOW	

Lifting & Straining	Myself, others in the workshop and bystanders/ members of the public.	Awareness of manual handling limitations regarding weight of components. Anything over 25kg should be moved by multiple people or with lifting equipment. Using the correct lifting technique is used whilst lifting. Check weight limits on lifting aids.	2	3	6	MED	
Chemicals & Poisons	Myself, others in the workshop and bystanders/ members of the public.	Ensure that fittings are properly secured to the gas bottles. The tap should be opened, listen for any leaks and monitor the pressure gauge to check that it hasn't dropped. COSHH regulations should be considered when using any products that fall under these regulations, the safety data sheet and relevant PPE should be worn before continuing to use said chemical.	3	2	6	MED	Safety data sheets should be kept for all relevant products
Moving Parts, Machinery & Vehicles	Myself, others in the workshop and bystanders/ members of the public.	If working on any vehicles the Safe stop procedure should be followed. Pinch points should be monitored whilst working on moving parts and on vehicles. And relevant training should have been provided prior to using any machinery to ensure that the driver is safe and competent.	2	2	4	LOW	Only operate machinery in designated work areas and keep away from walkways.
Lifting & Straining	Myself, others in the workshop and bystanders/ members of the public.	Awareness of manual handling limitations regarding weight of components. Anything over 25kg should be moved by multiple people or with lifting equipment. Using the correct lifting technique is used whilst lifting. Check weight limits on lifting aids.	2	3	6	MED	
Chemicals & Poisons	Myself, others in the workshop and bystanders/ members of the public.	Ensure that fittings are properly secured to the gas bottles. The tap should be opened, listen for any leaks and monitor the pressure gauge to check that it hasn't dropped. COSHH regulations should be considered when using any products that fall under these regulations, the safety data sheet and relevant PPE should be worn before continuing to use said chemical.	3	2	6	MED	Safety data sheets should be kept for all relevant products

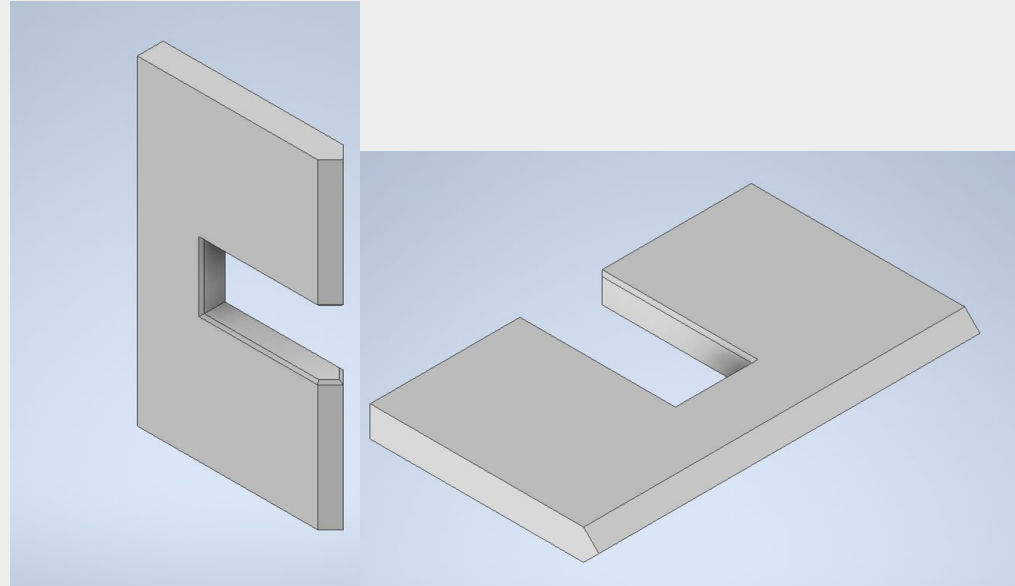
Moving Parts, Machinery & Vehicles	Myself, others in the workshop and bystanders/ members of the public.	<p>If working on any vehicles the Safe stop procedure should be followed.</p> <p>Pinch points should be monitored whilst working on moving parts and on vehicles. And relevant training should have been provided prior to using any machinery to ensure that the driver is safe and competent.</p> <p>Specific machinery and tools that require certification in order to be used - abrasive discs & telehandler</p>	2	2	4	LOW	Only operate machinery in designated work areas and keep away from walkways.
Noise Exposure	Myself, others in the workshop and bystanders/ members of the public.	<p>Hearing protection should be worn when the noise level raises over 80 db. Or if exposed to loud noise.</p> <p>Noise between 80 - 85 db should be considered on a risk assessment.</p> <p>It is mandatory to wear ear defence when the noise level is above 85 db</p>	2	1	2	LOW	
Eye Damage	Myself, others in the workshop and bystanders/ members of the public.	<p>Eye protection should be worn whenever there is danger of pouring objects entering the eye.</p> <p>For welding tasks a welding helmet should be worn with the appropriate shade of lens for the job.</p>	2	1	2	LOW	
High Pressure	Myself, others in the workshop and bystanders/ members of the public.	<p>Ensure that fittings are properly secured to the gas bottles. The tap should be opened, listen for any leaks and monitor the pressure gauge to check that it hasn't dropped.</p> <p>Ensure the correct PPE is to be worn when using high pressure components such as accumulators and other high pressure components.</p>	2	3	6	MED	
Waste Disposal & Environmental Control	Myself, others in the workshop and bystanders/ members of the public.	<p>Ensure any waste is disposed of responsibly and is placed in the correct bins.</p> <p>Any chemicals should be categorised and stored in a bunded area capable of holding 110% of the capacity of the largest container. To be disposed of by a licenced courier and a ticket or certificate should be issued</p>	2	4	8	MED	Lead acid battery safety data sheet Petrol safety data sheet Engine oil safety data sheet Hydraulic oil sds Petrol safety data sheet Diesel Safety data sheet

Manufacturing

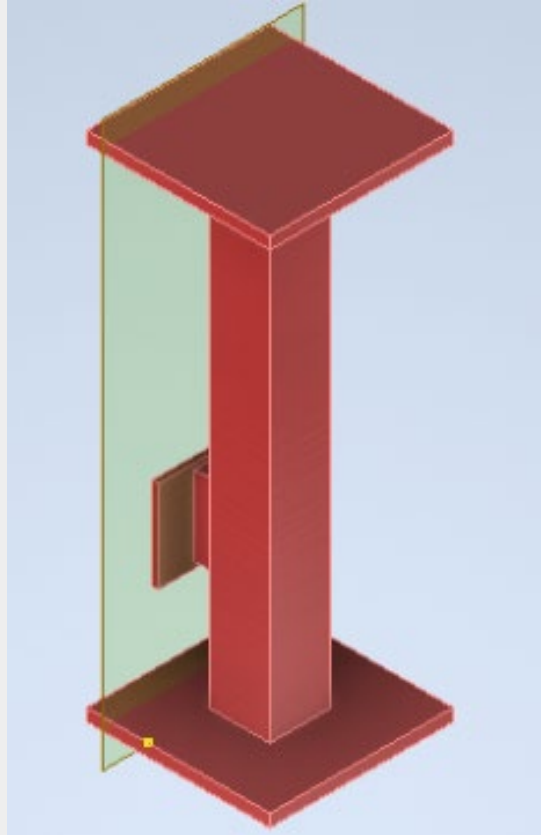
- Top Plate - Cut 20mm plate to designed dimensions with Oxy acetylene and tidied edges with 9 inch grinder.
- Back plate - 20mm plate
- Stepped plate - 10mm x 80mm into 150mm
- Tacked the above plates together and put it onto the post knocker rail.
- Once tested, I then welded the above sections together in order to form the platform

REDESIGN!!!

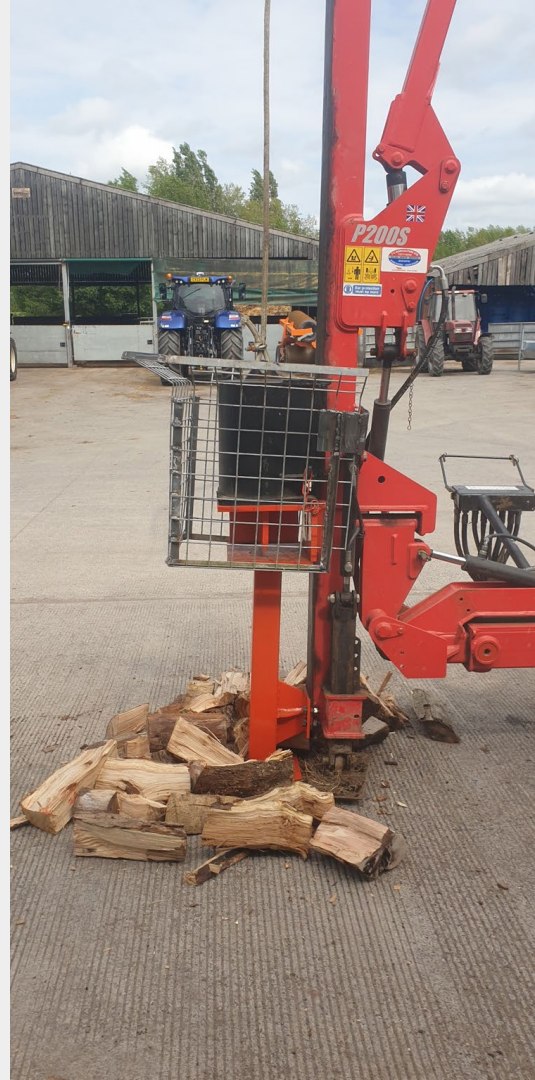
Redesign and rethink

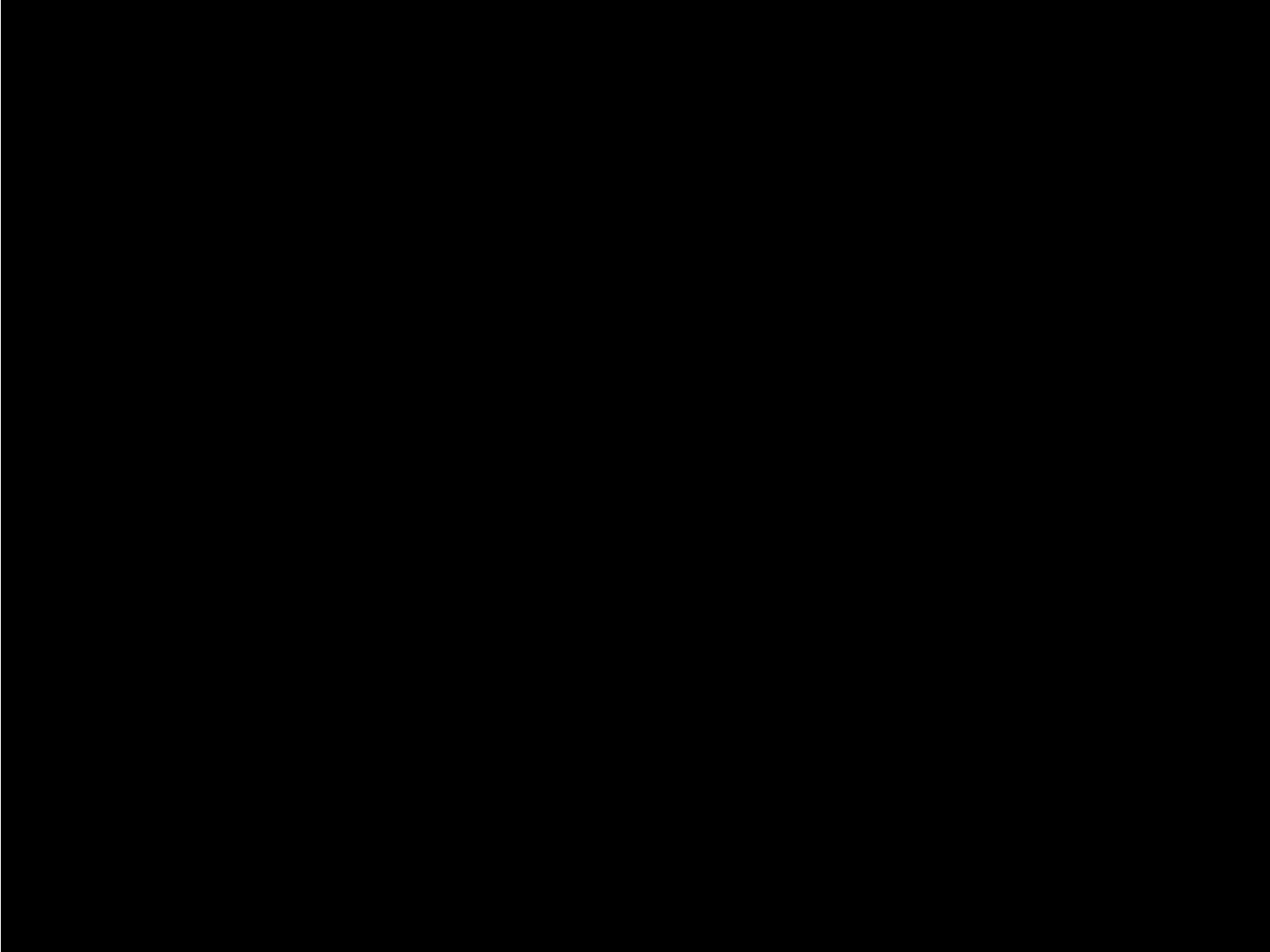


Securing the leg to the knocker











Can Crusher



Costs

20mm x 1000mm x 1000mm Flat steel = £183.69

10mm x 100mm x 800mm Box Steel = £32.43

10mm x 400mm x 80mm flat steel = £78.94

Paint = £28

1 inch angle iron 5m - £30

Steel mesh = £40

Hours - 8 @ £18/hr = £144

Total = £605.84

Retail price £750

Manufacturing limitations

Limited resources in the workshop.

Limited Space

Limited Materials

Limited Plug sockets

Limited Stock

Target Market

People with Post Knockers -

Post knocker is often left sat in the shed over the winter months.

By making an adapter to the post knocker it will increase the versatility of the post knocker and allow it to be used throughout the year.

How will I protect my idea?

Patent,

Sell the idea to someone else.



Whats next?

I would like to enter my idea for the IAgRE award, this will hopefully help me progress my idea in the future.

Diolch am wrando,
Unrhyw Cwestiynau?

Thank you for listening,
Any Questions?

