

The
DOUGLAS BOMFORD
SUPPORTING AGRICULTURAL ENGINEERING *Trust*

Summit
6 November 2023

*"Delivering sustainable farming practices
through agricultural engineering"*



Programme

10:10 DBT's New Strategy:

- *What we do now* (Nick August)
- *Education and Training* (Dr David Llewellyn)

10:40 The Challenges:

- *'What farmers Government / Policy Makers and others need to overcome.'* (Mark Moore)

11:30 Q&A

12:00 Lunch

12.45 Solutions: *'What can we deliver through collaboration?'* (Paul Miller)

13.30 Breakout Session:

- *'What do we (all) need to do differently? Who, how and when?'* (Mark Moore)

15:00 Plenary Session:

- *Conclusions and next steps* (Speakers Panel)

15:45 Review

16:00 Departure

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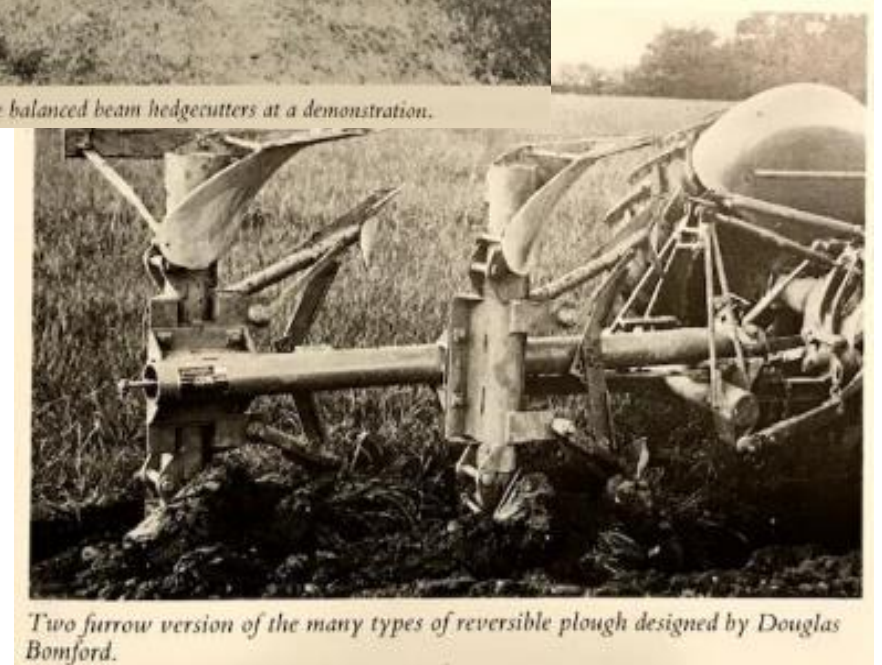
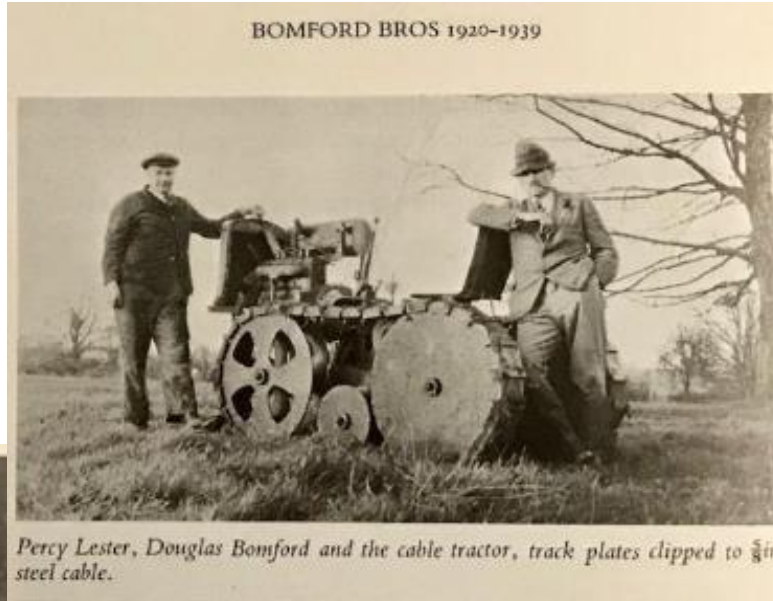
Background to the Trust
What we do now

Nick August
(Chair of the Board)

Scope of The Trust

The Douglas Bomford Trust is concerned with all aspects of engineering to support agriculture (food production, energy crops and environmental cropping schemes), horticulture (food production and ornamentals) and forestry.

Douglas Bomford's early innovations



THE "SAPPER MAJOR" BULLDOZER/ANGLEDZOZER
 Patent appn. No. 15812/45



For attachment to most standard Agricultural track laying tractors without interfering with their use for other purposes. Attachable and removable in a few minutes. Quickly changed to ANGLEDZOZER. Simple hydraulic control.

LOW PRICED HIGHLY EFFICIENT EASILY FITTED
 £126 10s. 0d. ex-Works

PROMPT DELIVERY

Also makers of the "Sapper" Earthmover for Fordson Tractors.

BOMFORD & EVERSHED Ltd., Salford Priors, Evesham



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 Three model choice to meet your needs

SUPERFLOW Lo-Draft
 For deeper work in heavier soils
 This equipment gives maximum penetration with the least resistance. It has minimum resistance of low resistance capacity. High capacity front-end protection covers the clutch and line.



SUPERFLOW Standard
 For high shatter surface ploughing
 A deep cut of high, 11 inch or 8 inch, shatters on all three cylinders. It has a custom built 11 inch Superflow Taper Shaper.




SUPERFLOW Powertrak
 For Crawlers and big wheeled tractors
 Built in rugged design to match the tractor power. Incorporates a high output safety system. It has an 11 inch.




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BOMFORD

Dyna-Drive



**Break Up Stubble :
 Break Down Ploughing :
 Ground Driven**



MADE IN ENGLAND



THE BOMFORD STORY

Theo Sherwen



Objective of the Trust

“To advance knowledge, understanding, practice, and competence in the application of engineering and technology to achieve sustainable agricultural, food and biological systems for the benefit of the environment and mankind.”

➤ Summarised in The Douglas Bomford Trust strap line:

“Supporting Agricultural Engineering”

Disruption to agricultural production, support and supply chain

- Diseases: eg Swine Flu, Avian Influenza, Bovine TB, Ebola, Covid.
- Wars.
- Brexit.
- Legislation.
- Weather extremes.
- Government Policy - home and abroad.

Resources

- ~ £6mill invested (ethical focus).
- Income provides annual disbursement of ~ £150k.
- Part-time Secretary and Administrator.
- Office in IAgRE HQ at Cranfield University.
(Long and close association with the Institution)
- Trustees with wide range of expertise and experience.



Wide range of research at ever-wider range of universities

Examples of recent Soil & Water Projects:

Cranfield: Controlling sediment and phosphorus losses; in-field measurement of nitrogen; precision irrigation to improve water and energy for sugarcane.

Reading: Flood management strategies on production.

Worcester: Monitoring effect of conservation agriculture on soil erosion and flood protection using drones.

Nottingham Trent: Conservation agriculture on soil, crop growth and yield.

Birmingham: Water desalination in Jordan Valley. (International collaboration.)

HAU: Long-term 'Traction and Tillage' projects (4xPhDs).

RAU: Supporting training for Ukraine specialists in soil remediation.



Recent Plant / Crop Management Projects

Cranfield:

- Variable rate application of plant protection products
- Use of PAM to prevent splashing and capping
- Novel green fertilisers / carbon capture technology to improve soil health & grain quality

Imperial College, London:

- Using spectral signatures of plant leaf biochemistry to diagnose plant stress

Reading:

- Herbicide ejector for plant-specific weed control by autonomous robot (field vegetables)

Glasgow:

- LED lighting & crop quality in vertical farming

Lincoln:

- UV-B radiation driving variation in UV-absorbing area of flowers
- Real-time vision-based spot spraying for high efficiency / precision weed management.

Hartpury:

- Moving towards net zero through farm level monitoring.

Recent livestock projects

Liverpool John Moore's

- 'Virtual' fencing and remote monitoring of grazing livestock.

Nottingham

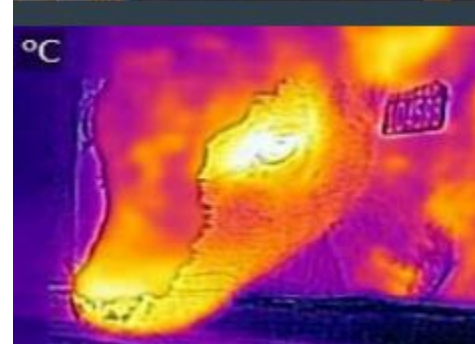
- Image-driven monitoring solutions for dairy cow management.

HAU

- Ventilation in pig units.

RAU

- Calf monitoring with thermal imaging ('Future Farming' demo).



Role of the Trust

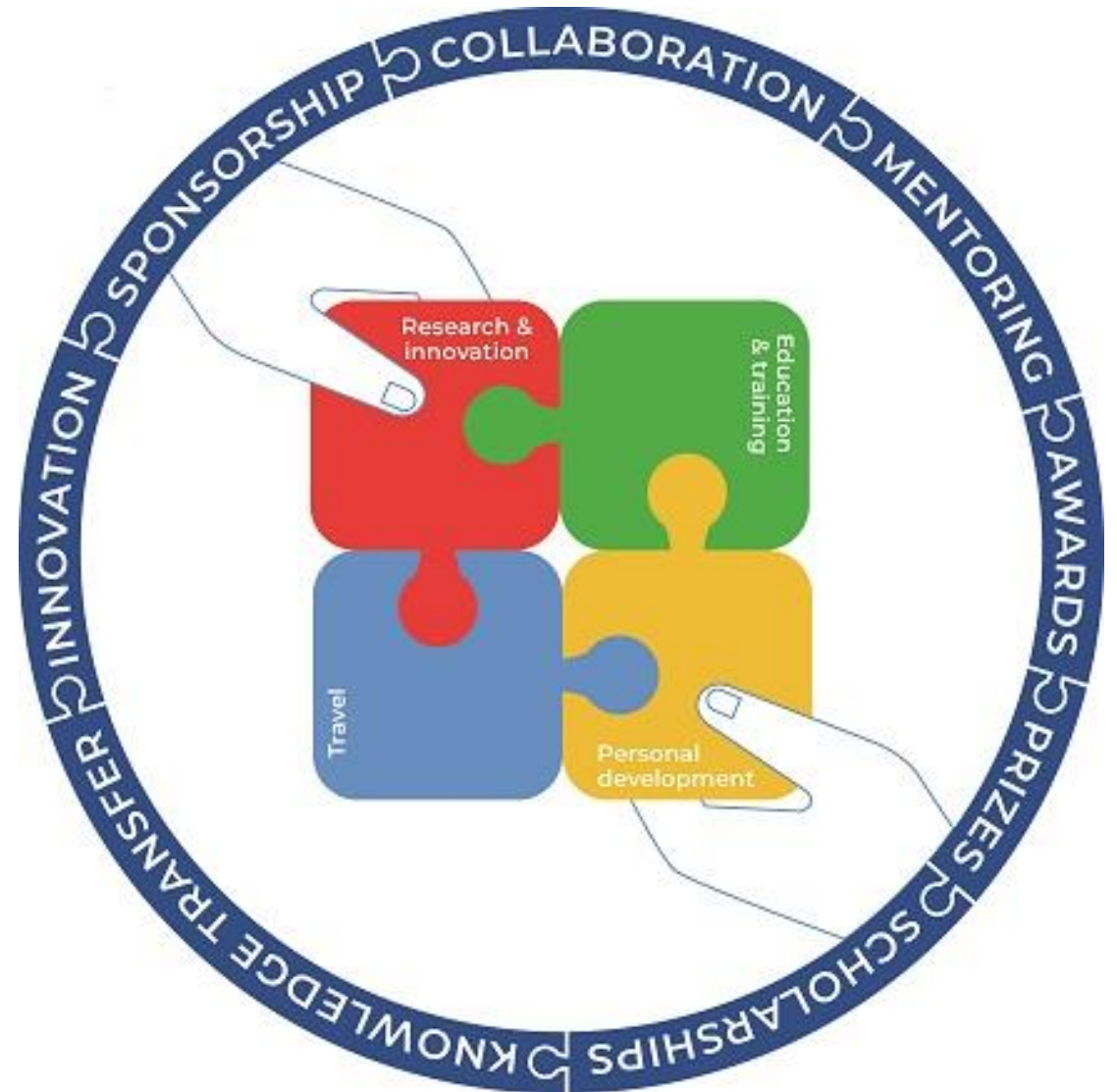
The Trust provides funding primarily for:

Research and innovation

Education and training

Travel

Personal development



Ideas needed

“Help us fill in the blank sheet!”