

DOUGLAS BOMFORD TRUST

GENERAL MANAGEMENT BOARD MEETING HELD IN APRIL

A meeting of the Board of Trustees was hosted by AGCO at Stoneleigh Park in early April and was attended by all but one of the Trustees. At this meeting the Trustees:

- Reviewed the administration and financial position relevant to The Trust.
- Reviewed the progress of research projects and other activities that are refunded by The Trust.
- Examined new proposals for funding

and made recommendations as to which of the submitted proposals should be funded: The Trust agreed to support activities relating to:

- The monitoring of grazing livestock at Liverpool John Moore's University subject to a positive response from an invited referee.
- Approaches to educating learners in how software development can assist in fuel economy and emissions reduction at Hereford and Ludlow College, and

- A novel EM sensor for measuring fish at the University of Liverpool.

It was also agreed to extend The Trusts involvement with the Arkwright Engineering Scholarship Scheme that aims to promote engineering to those studying for A-levels at school and to seek cooperation with the Agricultural Engineers Association to broaden the possibilities for providing work experience for sponsored students.

Studentships

Undergraduate students from Harper Adams University who had successfully applied for Douglas Bomford studentships had their awards presented to them at a special scholarships presentation held at the University on 17th February 2016. Awards were made to William Ashton, John Nixon, James Charnley, Binbin Dong and Thomas Sutton and The Trust was represented at the presentation event by Dr David White in his role as a trustee.



Dr David White, trustee (centre) and recipients of Douglas Bomford studentships at Harper Adams University (left to right John Nixon, James Charnley, Tom Sutton and William Ashton)

Travel and Small Project Awards

The Trust contributed to an "Engineers without Borders - Sheffield" project concerned with the development of a pedal-powered water pump for irrigation use. The objectives of the project included:

- To develop pedal-powered water pump technology so that it can be used as a viable, small scale, off-grid method of irrigating low-acreage farmland in Northern Malawi during the dry season;
- To provide EWB-Sheffield members with invaluable experience working on engineering development projects abroad thereby developing their skills in designing engineering solutions and implementing complex agricultural projects. Sam Stedman and Andrew Merson visited a collaborating organisation in Malawi during August to October 2015 and provided The Trust with a comprehensive report of their activities and findings on their return. Copies of this report are available from the secretary to The Trust on request. It was interesting to note that observations relating to their initial testing of a pump design included:
- That women were much less

Trials with the pedal-powered pump in Malawi



- comfortable pedalling the bicycle than the men. The reasons were: they did not usually ride bicycles so the wobbling made them feel unsafe, they did not want to show their legs to the men when pedalling, and the seat was very firm which was uncomfortable.
- Initially men had to be encouraged to sit on the bike and pedal with their legs instead of using their arms to turn the cranks. (They did this with one person on each crank arm)
 - Users were disappointed with the

flow rate in proportion to the amount of work they had to put in.

- The pump had to be re-primed many times during pumping
- Users preferred using the mountain bike we supplied as opposed to their own local bike as the higher gear ratio allowed them to pedal more slowly
- Users could not put the pump into transportation mode on their local bicycle because the rear mudguard was too wide to fit inside the pump casing.