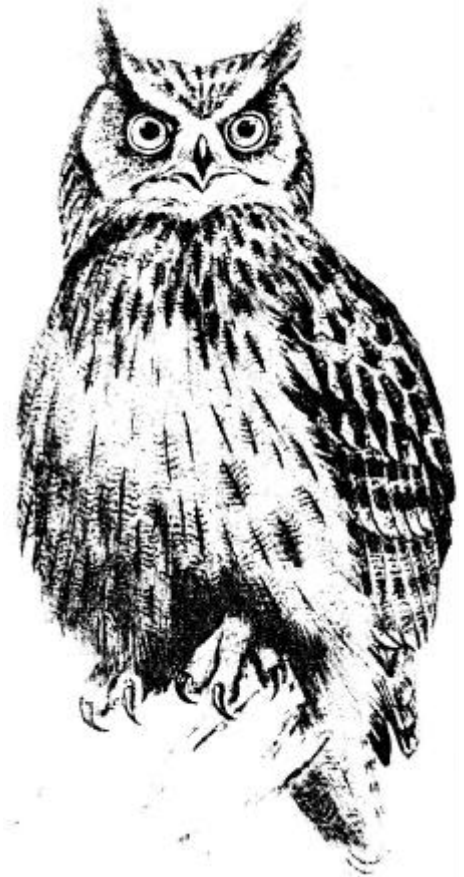


ALAM

Newsletter

Spring 2000



**The Association of
Lecturers in Agricultural Machinery**



The Association of Lecturers in Agricultural Machinery

"Phillip Hurrell" <PHILH@

RODSEVENTH.AC.UK>

Engineering Sector
Reaseheath College
Reaseheath
NANTWICH
Cheshire
CW5 6DF

May 2000

Dear Colleagues

Summer is at last in the air and the end of term beckons.

Those who were fortunate to have the opportunity to attend the European tour to Denmark enjoyed a very well planned and well-executed trip with very informative visits. I am sure those who went would like to join me in congratulating Gwynfor Williams for his efforts. Some reports are included in the newsletter to wet the appetite.

An up to date members' list appears as usual, with the standard request for all persons to check their membership and to encourage those who are not listed to join.

Otley College is holding a mini two-day Summer conference during July. Our Annual General Meeting will also be held at this event and if you are unable to attend could I please request your apologies and any comments that you may have to enable a wide spectrum of members to be represented. One issue which was raised on the Denmark trip concerns the quorum at such meetings, and I have included an article in this newsletter outlining the proposals suggested.

Claas have approached us to consider running a four-day course again, this time in October and you will find details enclosed. Such events represent good training and will only continue to be held if members participate and offer to organise or research such events. Your suggestions are always welcome.

Hope you all have a good summer

Phillip Hurrell
Honorary Secretary



The Association of Lecturers in Agricultural Machinery

NOMINATIONS FOR COMMITTEE

If you wish to nominate any Officers for Committee, please complete the form below and return to;

Phillip Hurrell
Engineering Sector
Reaseheath College
Reaseheath
NANTWICH
Cheshire
CW5 6DF

Present Officers

Chairman	Tony Houghton	Myerscough
Chair Elect	Chris Creasy	Otley
Secretary	Phillip Hurrell	Reaseheath
Treasurer	David Heminsley	JCB
Past Chairman	Jonty Rostron	Newton Rigg
Committee members	Tim Richardson	
	Ryan Roberts	Duchy
	Len Foreman	Rycotewood
NVQ (co-opted)	John Gough	Rodbaston
Inst. Ag. Eng.	Dave Stephenson	Rycotewood
Conference 2000	Gwynfor Williams	Myerscough

	Nominee	Proposer	Seconder
Chair Elect			
Secretary			
Treasurer			
Committee member 1			
Committee member 2			
Committee member 3			



The Association of Lecturers in Agricultural Machinery

Changes to the Constitution

As mentioned in my opening letter, changes to the constitution in respect of a quorum at AGM were discussed in great depth and detail at the recent European tour.

The changes as outline below were unanimously accepted by all present and I have been asked to convey them to the membership for examination and comment. The proposals have been accepted under the terms of the constitution and it was agreed at the last committee meeting for everyone to have the opportunity to comment.

Current constitution

14) PROCEDURE AT MEETINGS

- ii) The quorum of a General Meeting shall not be less than one-sixth of the paid-up Members present in person.

Proposed constitution

14) PROCEDURE AT MEETINGS

- ii) The quorum of a General Meeting shall not be less than **twelve** of the paid-up Members present in person.

If anyone has any comments to make concerning these changes, please contact me before 12 July 2000, as after that date the changes will be set in place.

Phillip Hurrell
Honorary Secretary
Reaseheath College.

ALAM Members 1999-2000

Listed according to the place Newsletters are mailed to.

Askham Bryan College Sandy Ellis 99/077 Gordon Tailby 99/114 Paul Talling 99/014	East Devon College John Palmer 99/016 Tony Roberts 99/020	Lackham College John Dixon 99/049 Richard Heath 99/017 Michael Sidlow 99/081	Rycotewood College Lionel Foreman 99/065 Evelyn Pearce 99/024 David Stephenson 99/031
BAGMA Mike Tearby 99/112	Easton College Gerald Anderson 99/072	Llysfasi College Peter Eland 99/060 David Williams 99/122	Salesian College Philip Harold-Barry 99/117
Barony College Ian Taylor 99/025	Evesham College Alan Fagg 99/053	Myerscough College Kevin Davenport 99/042 Tony Houghton 99/074 Gwynfor Williams 99/043	South Kent College of Tech Bob Creasey 99/086
Bicton College Chris Jaworski 99/056 Julian Jordan 99/097 Peter Turner 99/145	Hadlow College of Agriculture James Sanders 99/005	Newton Rigg College John Jones 99/045 David Ross 99/058 Jonty Rostron 99/070	Sparsholt College Bruce Badger 99/066 Nick Bevan 99/010 Nigel Fox 99/106 Julian Greenman 99/085 Richard Gregory 99/064 William Helen 99/021 Nigel Macpherson 99/061 Roger Tiller 99/071
Bishop Burton College Martin Baxter 99/108 Rick Sunderland 99/088 Charles Szabo 99/001	Harper Adams Green 99/141 Underhill 99/140	Oaklands College Nicholas Cartwright 99/030	Warwickshire College David Howells 99/004 Tym Morgan 99/087 Peter Walley 99/063
Brackenhurst College Vic Hird 99/062 Trevor Kinch 99/003 John Pygott 99/084 Martin Towsey 99/098	Hartpury College Patrick McLeod 99/082 David Scotchmer 99/032	Oatridge Agricultural College John Owen 99/144	Welsh College of Horticulture Trevor Edwards 99/023 Colin Hughes 99/055 Tim Jenner 99/130 Andrew Read 99/131
Brinsbury College David Harris 99/033 Brian Simpkin 99/022	Hayter Ltd Robin Blackford 99/109	Otley College Richard Clarke 99/069 Stewart Cousins 99/011 Chris Creasy 99/037 Paul Harrison 99/093 Chris Keeble 99/054 Michael Percival 99/124 Andrew Soar 99/041 Mark Stallabrass 99/125 Tom Turney 99/HON Richard Waterson 99/067	Writtle College Brian Cairns 99/104 Steve Hackett 99/027 Paul Hill 99/102 Iain Kirk 99/095 Richard Langley 99/028 David Lankester 99/091 Les Milne 99/009 Clive Perrins 99/038 Andrew Salmon 99/123 Steve Warr 99/026
Cannington College Stuart Christie 99/007 Alan Davey 99/090 Frank Facey 99/034 Paul Fitton 99/119 Steve Hasell 99/089	Hereford College of Technology Ian Coleman 99/111	Otter Services Thomas Fackrell 99/110	
Claas UK Ltd David Sparks 99/008	Home Michele Brown 99/129 John Bumby 99/052 Denis Cartmel 99/044 Peter Cockrell 99/078 Keith Coldwell 99/137 Peter Coleman 99/146 Miles Couchman 99/006 Oliver Dunthorne 99/128 Paul Durant 99/075 Peter Homer 99/051 Richard Newman 99/096 Mike O'Dowd 99/HON Robert Patmore 99/143 Brian Poulson 99/073 Robert Rattray 99/036 Tim Richardson 99/126 Jon Sarsfield 99/103 Emlyn Thomas 99/050 Mark Tyson 99/079 Arthur Walker 99/HON John Welwood 99/118 Peter Weston 99/068 Ian Whitehead 99/107 David Wilson 99/019 Peter Woodliffe 99/047	RDS Technology Ltd Martin Dingemans 99/138	
Coleg Meirion Dwyfor Terence Broad 99/035	IMI Norgren Ltd David Billet 99/142	Reaseheath College Tim Ball 99/105 Justin Connor 99/134 David Cooke 99/133 John Couling 99/132 Mark Embrey 99/039 Andrew Frank 99/018 Phillip Hurrell 99/057 Melvin Johnson 99/100 Alexander Johnston 99/101 Dave Kynaston 99/099 Rob Lee 99/076 Colin Maddock 99/135 Neville Mould 99/116 Brian Nicholls 99/083 Simon Parker 99/040 Alastair Taylor 99/015	
Coleg Powys Neal Dodd 99/136	JCB International Training Centre David Heminsley 99/127	Rodbaston College John Gough 99/080	
De Montfort University Stephen Watson 99/139	Kingston Maurward College Colin England 99/092 David Henley 99/046 Tim Northmore 99/012	Royal Agricultural College Harry Calling 99/048	
DeMontfort University Clive Bound 99/013 Paul Bristow 99/121 Graham Hartley 99/094			
Duchy College Duncan Elliott 99/029 Robert Hancock 99/002 David Hinchcliffe 99/120 Anthony Kessell 99/059 Ryan Roberts 99/113 Duncan Wilson 99/115			

As on 7 March 2000. Please check and make sure all your colleagues are on the list! Subscriptions for 2000/2001 are due on April 1st; if you don't have a standing order, please send yours with one of the membership forms elsewhere in this newsletter. Thanks.



The Association of Lecturers in Agricultural Machinery

THE 40th ANNUAL GENERAL MEETING

AGENDA

1. Apologies.
2. Minutes of the 39th AGM on Monday 19th July 1999
3. Matters arising from the minutes of the last AGM
4. Chairman's report
5. Treasurers report
6. Induction of new Chairman
7. Presentations
8. Election of Committee
9. Election of Auditors
10. Nominations
11. 2000 Conference
12. 2001 Conference
13. Southern Ireland colleges
14. Constitution amendments
15. One day seminars 2000/2001
16. NVQ / GNVQ update
17. Update on links with The Institution of Agricultural Engineers Education and Training Committee
18. Any other business

Minutes of THE 39TH ANNUAL GENERAL MEETING held at Reaseheath College

1. Apologies

Nick Bevan, Reaseheath staff, John Gough, Duncan Elliot, Nick Cartwright, Steve Hassell, Emlyn Thomas, Dick Waterson

2. Minutes of the 38th AGM held on Tuesday 20 July 1998

Proposed by Jon Sarsfield, seconded by Nigel Macpherson, duly signed as a true record of the meeting by Chairman.

3. Matters from the minutes of the last AGM

Jon Sarsfield has not yet received his owl.

4. Chairman's report

Jonty Rostron gave his report, copy in the newsletter.

5. Treasurers report

Dave presented the treasurers report to the AGM. Audited by Finance officer at Rodbaston. Dave to do summary of the insurance policy provided by ALAM for organisers of conference and one day events. Tim congratulated Dave on his efforts for providing a clearer record of membership and finances.

At this point in the meeting Chris Bishop (Reaseheath) was invited to the meeting to do a presentation on the Maize Maze at the college. Following the presentation it was decided by the meeting for the delegates to have a go at the Maize Maze as an evening event. Chris was thanked by all for his presentation.

6. Induction of new Chairman

Jonty Rostron induced the new Chairman, Tony Houghton

7. Presentations

Tony presented the usual gifts of an owl statuette and painting to Jonty Rostron and thanked him for his efforts during the past year.

8. Election of Committee

Chairman Elect

Chris Creasy was proposed by Chris Keeble and seconded by Jonty Rostron. Chris was duly elected.

Secretary

With no nominations Phil was asked if he would stand and duly agreed.

Treasurer

With no nominations Dave was asked if he would stand and duly agreed.

Committee members

Tim Richardson was nominated by Jonty Rostron and seconded by Chris Keeble. Tim was duly elected.

9. Election of Auditors

Dave Heminsley proposed to continue to use the services of business lecturer at Rodbaston College as Auditor. Seconded by Dave Kynaston and duly carried.

10. Nominations

There were no nominations for Honorary membership

11. 1999 Conference

Phillip Hurrell outlined briefly the programme as per the delegate pack. Delegates now wish to visit the Maize Maze and the Anderton Boat Lift. Phil will arrange this for Tuesday evening.

12. 2000 Conference

Gwynfor outlined the plans to go to Denmark in the year 2000. Gwynfor proposed a two-centre conference, based at Aalborg and Sorø.

Visits to include Gas farm, Wind turbine, Massey combines, JF foragers, Wind turbine manufacturer and Hardi's.

The date for the visit has been set for Saturday 8 April 2000 to Saturday 15 April 2000 with the coach departing from Newton Rigg early Saturday morning to arrive at Harwich for the evening sailing.

The cost has been set at £200 with the remainder being paid by ALAM from the funds.

Gwynfor was thanked by all.

13. 2001 Conference

It was suggested by the delegates for the conference for 2001 to be held in the south of the country as most of the previous conferences have been in the north. Writtle was suggested as a venue, they would be delighted. Phil to get information in the next news letters.

14. Southern Ireland colleges

Dave Kynaston told the delegates that he had had positive conversations with the Irish lecturers when they visited Reaseheath in September. A few have joined ALAM and Reaseheath College staff will continue to present ALAM to future visiting lecturers who will be joining the college over the next year for staff development.

15. Constitution amendments

The proposed changes to the constitution as outlined by Phillip were discussed.

Following further discussion on the detail the proposed changes were accepted with the secretary to send out an amended constitution to all members with the newsletter.

Proposal made by Jonty Rostron and seconded by Will Helen, the vote on proposal being unanimously carried

16. One day seminars 1999 / 2000

RDS – all those who attended were provided with an excellent presentation

Stihl – was well attended with a lot of technical information provided

IMI Norgren – pneumatics course was attended by Reaseheath and Harper staff at Reaseheath College. A good course with a lot of technical knowledge gained along with some practical activities.

Fendt – no contact at present – Phil Hurrell to contact after summer break

Lucas – a one-day diesel fuel injection systems seminar to be held at Tamworth in October 1999. Jonty Rostron to arrange with booking forms in newsletter.

Staff from Otley College proposed a one-day course at their new electronic centre. It was suggested that this be discussed at the next committee meeting.

17. GNVQ / NVQ update

NVQ – as John Gough was unable to attend Phil presented a paper on his behalf. The recent White Paper has proposed a number of changes to training and John has been asked as the ALAM's representative to provide a response. Phil distributed the paper from John with the request that delegates read the information provided and consider their response for John to collect at the conference dinner. Delegates engaged in a hearty discussion with a number suggesting they would be happy to provide John with the required information.

No changes due on GNVQ until Advanced level changes in September 2000. Dave Kynaston outlined to the delegates that recent discussions with EdExcel have suggested that the GNVQ is not supported (with only 2000 registrations this year) by the colleges who prefer the National Certificate and Diploma (11,000 registrations for the Certificate and 5000 for the National Diploma). It has been suggested that the GNVQ will become a very basic generic qualification, with specific qualifications coming in the form of certificates or diplomas. Reaseheath College will be actively involved with EdExcel in the design of units for both the GNVQ and Certificates and Diplomas. Dave suggested that any delegates who had comments to make about the current provisions could approach any of the Reaseheath staff during the conference.

18. Update on links with The Institution of Agricultural Engineers Education and Training Committee

No report was forthcoming from Dave Stevenson.

19. Any other business

Nigel Macpherson proposed that the mileage rate for committee members be changed to 20p per mile to provide those members on committee with an improved remuneration for their efforts on ALAM's behalf. This was seconded by Jonty Rostron and unanimously carried by the delegates.

Phil asked for all report writers to produce reports in either hand written form that can be typed up by him or on a computer disc.

It is likely that the next AGM will take place during the tour to Denmark so the committee at their next meeting will set a date and time.

With no other business the meeting was closed.

Signed as a true record

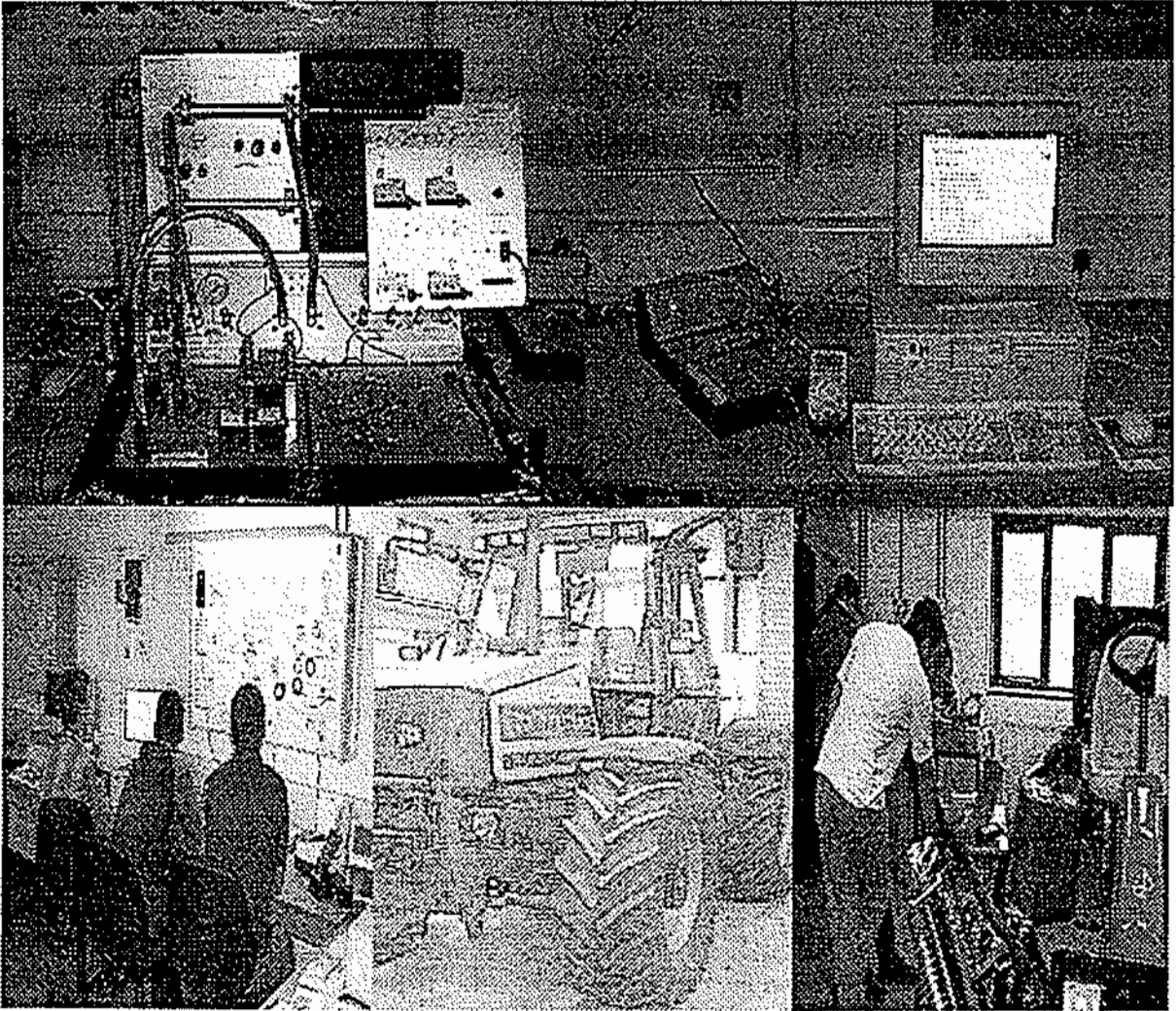
Chairman

Phillip Hurrell
ALAM Secretary



The Association of Lecturers in
Agricultural Machinery

OTLEY COLLEGE Centre of Excellence



Electronics, Autotronics, Simulator boards,
Hydraulics, Pneumatics,
Vehicle fault insertion & Computer managed learning



The Association of Lecturers in Agricultural Machinery

ALAM COURSE TO BE HELD AT OTLEY COLLEGE

Dates -: Wednesday 12 and Thursday 13 July 2000

Details

Wednesday 12 July-:

Lunch 12 noon in the Canteen

Then to Engineering to Centre of Excellence to use the new equipment

5.30 p.m. Arrive Port of Felixstowe for guided tour of port and logistics

Then to Hotel or Travelodge

Thursday 13 July-:

9.30 a.m. visit to Textron at Ipswich, factory tour and view range of amenity grass cutting equipment

12.30 p.m. lunch in the canteen

Depart

Accommodation at Travelodge Beacon Hill just off A14 four miles from Otley College

Bookings to central reservations 0800 850 950

Or The Bull Hotel Woodbridge five miles south of Otley College: -

The Bull Hotel Market Hill, Woodbridge, Suffolk IP12 4LR

Telephone: 01394 382089

Fax: 01394 384902

Delegates are responsible for booking and paying for their own accommodation

Any problems contact Chris Creasy Telephone-:

Work 01473 785543

Home 01359 270569



The Association of Lecturers in Agricultural Machinery

Presents a 2-day course for members at **Otley College Suffolk.**

On computer diagnostics, in the Otley College Centre of
Excellence.

A visit to the port of Felixstowe, to look at logistics, on a large
scale!!

Factory visit to Textron of Ipswich, (Formally Ransomes). To
look at amenity grass cutting equipment.

Please reserve places for the following persons on the ALAM
course.

NAME _____

COLLEGE _____

Tel. No. _____

All cheques made payable to ALAM

Members @	£35.00
Non-Members @	£45.00
Total	_____

Return To-
Chris Creasy
Engineering Dept
Otley College
Otley
Ipswich
Suffolk
IP6 9EY

Tel. No. 01473 785543
Fax No. 01473 785353

If you require an invoice
please tick below.



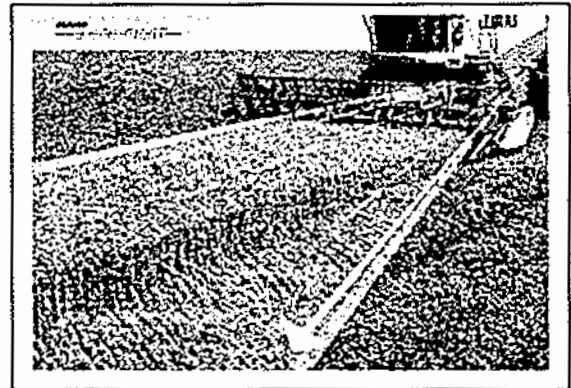
The Association of Lecturers in Agricultural Machinery

In association with

CLAAS

Presents a 4 day course for college lecturers on

**Lexion Combines
Quadrant Balers
Rollant Balers
Variant Balers
Challenger Tractors**



To be held at **CLAAS UK TRAINING CENTRE , SAXHAM, BURY St. EDMUNDS**

From: Monday 23rd October 2000 at 12 noon
To : Thursday 26th October 2000 at 12 noon

The cost will cover meals and training literature during the course but delegates will need to book their own accommodation (a guide to local accommodation will be made available)



**There are 16 places available and you will be in 2 separate groups giving ample opportunity for
“hands on”**

To book your place on this excellent course, please complete the booking form. If you require any further information please contact

Tim Ball Reaseheath College Nantwich Cheshire CW5 6DF

Tel 01270 613230 Fax 01270613285



The Association of Lecturers in Agricultural Machinery

In association with

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Presents a 4 day course for college lecturers on

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To be held at **CLAAS UK TRAINING CENTRE , SAXHAM, BURY St. EDMUNDS**

From: Monday 23rd October 2000 at 12 noon
To : Thursday 26th October 2000 at 12 noon

Cost **£50-00 members £60-00 non-members**

There are 16 places available and you will be in 2 separate groups giving ample opportunity for "hands on"

To book your place on this excellent course, please complete the booking form below and return it to Tim Ball at Reaseheath College

Please reserve places for the following on the CLAAS course		Return to: Tim Ball Reaseheath College Nantwich Cheshire CW5 6DF Tel 01270 613230 Fax 01270 613285
Name(s)		
College		
Tel Number		
All cheques must be made payable to A.L.A.M.		Please tick the box below if you require an invoice <input type="checkbox"/>
	Members @ £50 _____	
	Non - members @ £60 _____	
	Total _____	

N.V.Q. Update

During the Spring Study tour to Denmark an informal meeting was held to discuss the present situation relating to the delivery of our NVQ Engineering qualifications. At that meeting it became apparent that a number of colleges were experiencing a variety of difficulties in their attempts to offer and deliver these courses. These difficulties included the quantity and complexity of the paperwork, the availability of sufficient suitable industrial placements, industry awareness and understanding of NVQ's, increasing financial pressures within colleges and the availability of adequate funding to satisfactorily deliver what is required to achieve successful outcomes.

Following a telephone discussion with Mike Teanby of B.A.G.M.A. he has asked that the following information be passed on:-

1. The Task sheets have been revised and reduced in number to reduce the quantity of assessor signatures needed. The cross referencing to the log book is still required but the task sheets will have a new indexing system.
2. It is recognised that a foundation qualification is needed as a lead into the Level 2 N.V.Q.'s and work is going to start in the near future to write and submit what will be known as the Progression award. This will be designed as a one year full time introductory course which will prepare students for the N.V.Q. level 2. It is anticipated that it will be available for September 2001.
3. B.A.G.M.A. have organised four internal verifier workshops to take place in June. Try to send someone along to one of them to get fully updated! The venues and dates are as follows

8th June Rickmansworth,

14th June Askham Bryan,

20th June Reaseheath,

23rd June Pershore. Note this is changed from Evesham.

Contact Karen Jinks at B.A.G.M.A. for further information on 01923 720241

J Gough.
20.5.00

Visit to MS Dana Anglia engines

On the outward ferry journey to Denmark, the group was delighted to have the opportunity to visit the engine room of the MS Dana Anglia. The party was split into two groups, due to numbers, and I waited expectantly with the second group at 11.00pm (Danish time) at the information desk. A polite stewardess directed us to the lift and we descended into the belly of the ship.

The engine room is in the lower reaches of the ship, being approximately 3 metres below sea level where we were all issued with the obligatory hearing protection in the crews locker room, complete with washing machine (where does the water go at this depth?).

Our guide led the group through a large steel door in to the engine room, to be greeted by a wave of noise. As we walked over oily tread plates past the massive engines towards the control room, all were in awe of the engines. In the sound proofed control room (a little quieter) we were shown the control and display systems for all the engines on the ship.

The main propulsion engines were two French Pielstick engines with 18 cylinders, each producing a massive 10,400hp. These run at 500rpm whilst developing 90% power. When required, they can be run at 95% for short periods, but never at 100%. They drive the propeller shafts through a 2:1 reduction gearbox to achieve a speed of 250rpm. They also drive small generators to assist with electrical generation. The ship requires up to 1MW, which is produced by generator engines (large 6 cylinder engines) with two out of the three being run all of the time.

We left the control room to investigate the engines at first hand. A piston and conrod was stood at the front of one engine, looking not too dissimilar to a squat milk churn. We climbed up a level to look down on the massive engines. Here we were shown the Alfa Laval oil coolers and sea water coolers (yes, the same people as the milking machines, funny where we always find an agricultural connection). They were much larger than those used in a dairy.

We were then shown the right stabiliser, which was busy holding the ship steady. Each is driven by massive hydraulic rams that seemed to be constantly adjusting in relation to the attitude of the ship. We all assumed that a gyroscope would govern the control mechanism.

Each engine is fed with heavy oil, at 200 centistokes, which is passed through a boiler to heat the oil to 140°C and 100 centistokes. This is fed to the main engines at the rate of 55 litres per minute.

All of the engines, including the V18's, have a planned maintenance schedule, with piston and conrod sets being exchanged during a 4hr stay in port. These sets are maintained by the engineering staff on board the ship in a small workshop area that had a lathe, gas welding and cutting equipment, along with a very adequate supply of spare parts for almost anything.

As we left the belly of the ship via the lift each engine continued to beat away, producing a slight vibration whilst pushing the ship onward to Esborg at the rate of 21 knots.

A.L.A.M. Conference 1999

Report on the Visit to ADTRANZ, Crewe.

Gary Kinsey, personnel and training, gave us a very interesting talk on the history of the Crewe workshops, the present and the future developments by Adtranz. There has been a railway facility on this site since 1843. In 1987 the link with the BR Board was cut and BR Engineering Workshops, Crewe was formed. Adtranz was formed in 1996 through a merger of the railway interests of ABB and Daimler Benz. As the rail systems arm of Daimler Chrysler which enables it to draw on an immense pool of know-how from electrical and mechanical engineering to transportation systems. A global group of this scope offers advantages of scale in research, product development, low-cost manufacturing and business experience.

MASS TRANSIT

Adtranz provides automated guided transport systems for local transport at airports and urban areas designed for speedy, reliable and convenient transfer of large numbers of passengers on short routes. The CX-100 series is well established in numerous airports and cities worldwide but the next generation of people movers such as INNOVIA have been introduced.

For urban transportation, INCENTRO is available with the new 100% low-floor light rail vehicle, incorporating the strengths and flexibility of widespread Adtranz solutions including the GTx, Variotram and Eurotram. Swift and cost-effective with a wide range of design solutions, easy entering, spacious and comfortable interior and noise levels at the barest minimum.

MOVIA is the new modular product family for metros, benefits operator's from enhanced operations and a variety of options and performances capable of dealing with various passenger densities at low life cycle costs. For example the C20 in Stockholm and the H-Series in Berlin.

MAIN LINE

The new ITNO is marketed by Adtranz for commuting and regional operations, a modular product family with a variety of flexible and cost-efficient regional trains tailored to individual customer needs. Encompassing an extensive range of multiple units such as the proven Flexliner, Regio-Shuttle and GTW. There is a wide range of train configurations including diesel and electrical multiple units designed to meet the demands of both high and low density commuting.

The new CRUSARIS provided by Adtranz for intercity, interregional and high-speed transport. Predesigned modular options enable various capacity, performance and comfort levels. A customized design adapts to any traffic need. The standard train can be fitted with carbody tilting technology, ensuring faster, cost effective traffic without the need for new track investment. Intercity trains such as Turbostar to advanced express trains like the new Gardermoen Airport Express and the high-speed train ICE.

The Turbostar has normally three vehicles per unit all powered but two and four to six cars are optional. The units are fitted with bogies incorporating secondary air suspension to provide a quiet and comfortable ride under all conditions. Primary and Secondary suspension incorporates rubber chevron or coil and air. The lightweight aluminium bodyshells are of monocoque construction and the profile is optimised for maximum route availability without compromising the passenger environment. The number of seats in a three car unit is up to 226.

A full range of heating and ventilation options is available, including pressure ventilation and air conditioning options, to provide a comfortable passenger environment.

The basic three car unit has six driven axles that is 50% of the total. Vehicle power is up to 315kW. One diesel engine is provided in each car. A choice of service proven horizontally mounted, water cooled, in-line diesel engines is available, each equipped with a turbocharger and an intercooler. These extremely quiet units meet the latest Euro II emission standards and are coupled to smooth, efficient hydraulic or mechanical transmission systems. Fuel capacity allows up to 4000km between refuelling and maximum speed is up to 180 km/h.

The latest innovations have led to the OCTEON locomotive product family being developed to suit customer needs for fast, efficient and reliable transnational passenger and freight transport. A modular family covering all types of demands has become a key feature. This locomotive product family can operate on different gauge widths and electrical systems. A multitude of applications ranging from high-speed powerheads with 350 km/h top speed to pure freight locomotives, designed for tough freight distribution and heavy hauling. Examples the multi-purpose freight and passenger forwarder 101/145, the multi-voltage E 412 or the widespread Re 460.

FREIGHT SYSTEMS

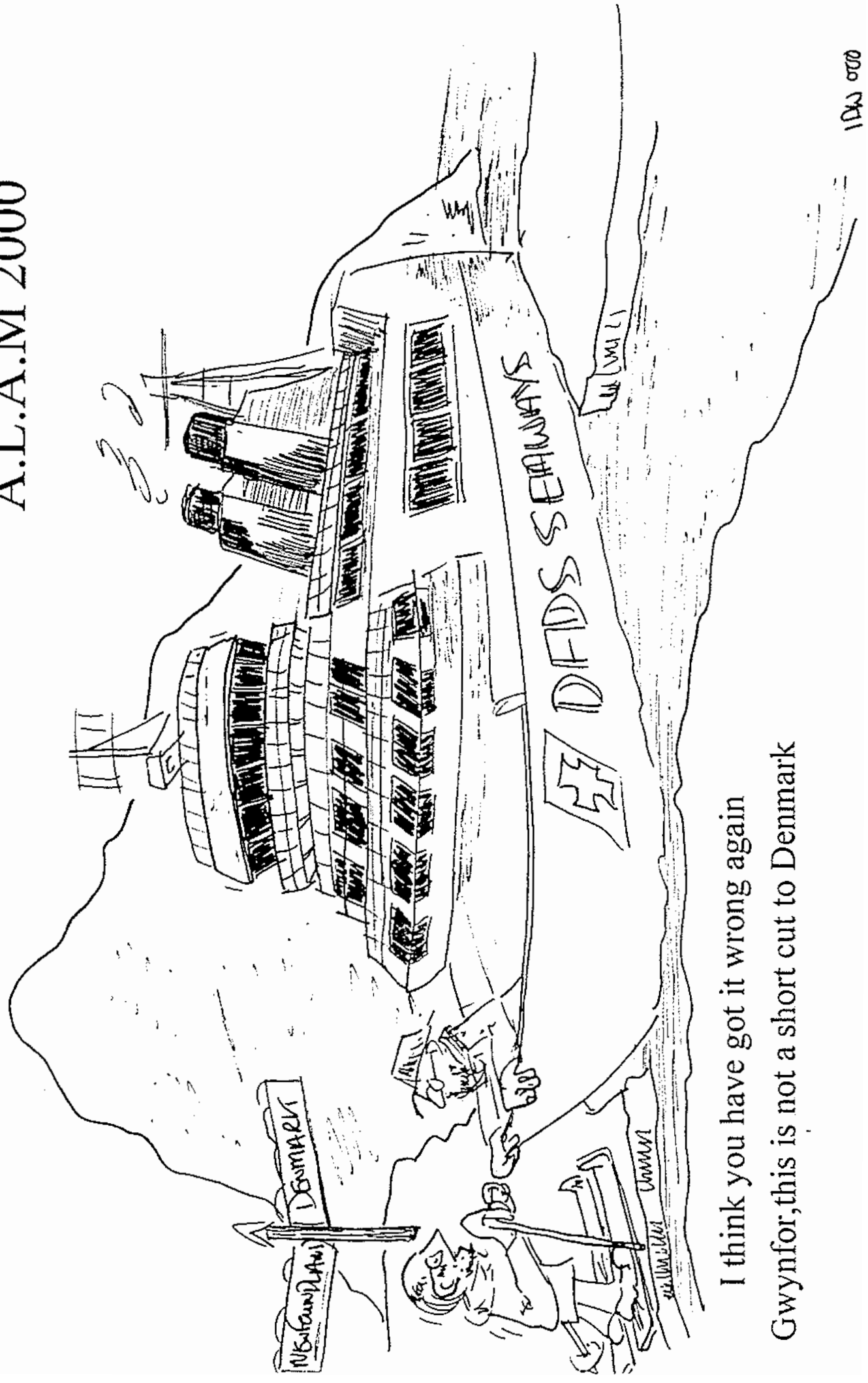
Adtranz also develops leading-edge rail technology for intermodal freight systems incorporating the unique strengths of air, road and naval transportation. The integrated door-to-door solutions such as the AUTOMATIC LOADING SYSTEM. These integrated freight systems equally benefit rail clients and freight forwarders. This type of development enables intelligent networking of transport systems.

TOUR OF RAILWAY WORKSHOPS

Following Gary Kinsey's talk, we were taken on a fascinating tour of the railway workshops. The workshops at Crewe are used for the repair of railway vehicles. The procedure is to strip down the bogies, car bodies, converters and drives. Then all the components are fully checked out and finally they are rebuilt.

Arthur Walker

A.L.A.M 2000



I think you have got it wrong again
Gwynfor, this is not a short cut to Denmark