

SPEAK OUT FOR ENGINEERING

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(as drawn up by an Organiser)

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SPEAK OUT FOR ENGINEERING

SAMPLE TIMETABLE

Regional Heat	Venue: Room AS1
South Eastern/Wessex	- Engineering & Applied Sciences Stage 1 Building THE UNIVERSITY OF SUSSEX Falmer, Sussex
Wednesday, 1 July	
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1015 - 1030	Assemble in Room AS1
1030	Introduction Draw to determine competing order.
1045 - 1245	Presentations 1,2,3 & 4
1245	LUNCH
1355	Reassemble in Room AS1
1400 - 1530	Presentations 5,6 & 7
1530 - 1600	Judges retire to reach their conclusion
1600 -1620	Discussion of results and announcement of winners.
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Judges Panel:	I F Carmichael CEng FIMechE Regional Chair
	R Bishop, Managing Editor "EUREKA"
	P J J Smith, Young Members' Panel
	M J Marshall Young Members' Panel Chairr
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Competing Universities:-	University of Brighton
	University of Portsmouth
	University of Southampton
	University of Sussex

C P Brotherston
Hon Secretary Eastern Young Members' Volunteer Network

**First Prize - £300 + Certificate, Second Prize £200 +
Certificate**

HEAT DETAILS	
HEAT (i.e. MALAYSIA)	
DATE OF EVENT	
TIME OF EVENT	
VENUE	
ORGANISERS' DETAIL	
NAME OF ORGANISER	
ADDRESS	
POSTCODE	
EMAIL	
TELEPHONE NUMBER	
ENTRANTS' DETAILS	
FULL NAME	
DATE OF BIRTH	
IMechE Membership No	(TO BE PROVIDED)
GRADE OF MEMBERSHIP	
ADDRESS	
POSTCODE	
TELEPHONE NUMBER	
EMAIL	
ENTRANTS PRESENTATION DETAILS	
TITLE OF PRESENTATION	
SYNOPSIS OF PRESENTATION (200 words maximum)	

SPEAK OUT FOR ENGINEERING

AIMS AND OBJECTIVES

The competition is for Affiliate members, Associate members, and those Members who have been professionally registered for 10 years or fewer, and is aimed at promoting the ability to communicate mechanical engineering subjects effectively. It is specifically concerned with verbal and visual communication in describing and explaining technical subjects. It is also designed to promote interest in the art of communication.

PRIZES

The prizes are funded from the Institution's Trust for Education and Research.

**1st Prize - £300
plus certificate**

**2nd Prize - £200
plus certificate**

WHAT DO COMPETITORS HAVE TO DO?

Competitors must give an oral presentation on a subject relating to mechanical engineering.

The duration of the presentation must not exceed 20 minutes, followed by 10 minutes for discussion and questions from a panel of judges.

WHAT ARE COMPETITORS JUDGED ON?

90% of the total marks are given for presentation with only 10% for technical content. This ensures that while all presentations must have mechanical engineering content in its broadest sense (purpose, research, design, feasibility, practicality), a topic concerning comparatively 'low' technology has an equal chance of success as one which is technologically very complex.

ELIGIBILITY TO ENTER THE COMPETITION

- Competitors **MUST** be either an Affiliate or Associate member or a Member who has been professionally registered for 10 years or fewer.

ENTRY RULES

- Competitors are required to prepare a written synopsis of 200 words maximum, which should be sent to the organiser when notification is given of the intention to enter the competition (failure to submit the synopsis

may invalidate the entry).

- The presentation must be made by an **individual** regardless of whether the subject is part of a group 'technical' project.

NOTE: The judges would expect more senior competitors, who may have had experience in industry; to have more polished skills and their marking assessment would reflect this. Please note that a winning entry in any year is not eligible for entry in subsequent years.

WHO ARE THE ORGANISERS OF THE COMPETITION?

The competition is run by IMechE's volunteer network by a local organiser.

TIMING OF THE COMPETITION

Dependent on the number of entrants and time available, the Organiser will have the discretion to determine whether the competition will be run over one or many occasions (i.e. one organiser may prefer to run the competition on one evening only, whilst another organiser may prefer to hold it over a series of nights, or even during the daytime). The Organiser may need to limit the number of entries if there is significant interest. Entries should be submitted to the local organiser and not directly to IMechE.

The timing of the competition will be at the discretion of the local Organiser, but will take place **before 31 December each year.**

ANNOUNCEMENT OF WINNERS

The winner and runner up will be announced after **all** the presentations have been given (which could mean a delay in making an announcement if the competition is held over a number of evenings). Entrants will be informed that this is the case by the local organiser.

EVENT EXPENSES

Entrants are generally expected to pay their own expenses to attend the event.

JUDGES AND JUDGING

Competitors will be judged on their presentation on the day. They may receive assistance both from supervisors or sponsoring companies **before** the competition (for visual aids) or from supervisors or friends **during** the competition (for helping to demonstrate working models etc). However, it is the competitors themselves who are judged on the day. The main aspect sought by the judges is the ability to explain a subject, however technical, in terms which are reasonably intelligible to non-technical listeners. Talking to someone who knows your subject is easy. Talking on the same subject to, e.g. a Board of non-technical Directors or a group of shop-floor workers, calls for different skills.

For example, they will be expecting a clear statement on the project objectives to include reasons for selecting the design, development and, if appropriate,

manufacture adopted. For research projects, you will need to include the possible effects of research on future developments. For manufacturing projects, the potential market, methods of manufacture and costs should be included.

The presentation may be enhanced by the appropriate use of visual illustrations, usually by means of a PowerPoint presentation, but other means of illustration (slides, drawings, photos, models, etc) can also be used. These can help draw attention to the key points, focus thinking and increase the audience's understanding of your presentation. However, careful thought needs to be given to the effectiveness and overall impact of your visual aids. The judges clearly want to assess your presentation skills; you will not succeed by using the latest technology if your personal skills are not up to scratch, and over-reliance on such aids may result in your presentation being marked down. Remember, your back-up facilities should support your presentation and not vice-versa! The competition will be judged on your ability to display effective communication skills.

APPOINTMENT OF JUDGES

Judges will be appointed by the Region/Branch and will be chosen carefully. As the aim of the competition is to test the entrants' ability to communicate effectively, competitors must bear in mind that some judges may be engineers although not necessarily 'mechanicals'. However some may not even have a technical/scientific background.

JUDGES' MARKING SCHEME

The same marking scheme will be used throughout the competition:

QUALITY	MAXIMUM MARKS
PRESENTATION	
1. Structure and content of presentation	30
2. Effective use of presentation material	15
3. Quality of presentation material	15
4. Quality of preparation including handling of questions	20
5. Presentation style	10
	90
TECHNICAL CONTENT	
6. Complexity of technical content	10
	10
TOTAL	100

The decision of the judges on the award of the prizes shall be final. No correspondence can be entered into.

BACKGROUND

The competition is organised annually by the Institution of Mechanical Engineers' local volunteer groups. It was originally established in 1964 to challenge young engineers to prove that they could 'communicate effectively', which is still an important area for today's developing engineers. In 1977 Her Majesty gave permission for the competition to be known as 'The Queen's Silver Jubilee Competition' (QSJ). The Competition has been adapted over the course of time to allow for greater participation, but the original theme of 'communicating effectively' still remains the emphasis of the competition and in 2004 changed its name to 'Speak Out for Engineering' Presentation Competition (QSJ).

CONTACT

Please contact your local Organiser in the first instance (details below) for information on when the competition is due to take place:

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Institution of Mechanical Engineers is a registered charity number 206882

SPEAK OUT FOR ENGINEERING

NOTES FOR COMPETITORS

INTRODUCTION – AIMS AND OBJECTIVES

The competition is for Affiliate members, Associate members, and those Members who have been professionally registered for 10 years or less, and is aimed at promoting the ability to communicate mechanical engineering subjects effectively. It is specifically concerned with verbal and visual communication in describing and explaining technical subjects. It is also designed to promote interest in the art of communication.

90% of the total marks are given for presentation with only 10% for technical content. This ensures that while all presentations must have mechanical engineering content in its broadest sense (purpose, research, design, feasibility, practicality), a topic concerning comparatively 'low' technology has an equal chance of success as one which is technologically very complex.

JUDGES AND JUDGING

Competitors are judged on their presentation on the day. They may, and frequently do, receive a great deal of help both from supervisors and sponsoring Companies before the competition (for visual aids) or from supervisors or friends during the competition (for working models etc). This assistance is permitted but it is the competitors themselves that are judged on the day.

The main aspect sought by the Judges is the ability to explain a subject, however technical, in terms which, are reasonably intelligible to non-technical listeners. Talking to someone who knows your subject is easy. Talking on the same subject to, for example a Board of non-technical Directors or a group of shop-floor workers, calls for different skills. The competition will be judged on your ability to display these skills.

Judges are, therefore, chosen very carefully. You can assume that they will all be reasonably educated, but they will not necessarily be engineers or even technical/scientific people. The judges will usually be engineers but not always mechanicals. The same marking scheme will be used throughout the competition (see the brochure for details).

THE ART OF SPEAKING

You have been speaking for many, many years and therefore you should find it relatively easy. However, you must consider how well you communicate when you speak. Remember that you can capture the attention of either an audience or a single person by varying the speed, volume and pitch at which you talk, pausing effectively, laying emphasis on specific points and even using your hands or facial expressions to convey ideas. Here are a few general guidelines.

The audience is important. Their reaction will provide the clue to whether you are communicating effectively. You should ensure you know roughly what size of audience to expect and also their collective expertise (which can depend on age and experience). This should aim to stretch their minds reasonably but not extensively. In the latter case, they would soon lose interest.

Nervousness is natural and is good for your presentation. It makes the adrenalin flow and helps your confidence. However, it is essential that you are clear about the aim of the presentation and what you are trying to achieve. Only if you are clear in your own mind a) about the topic b) about the audience, will your speech carry conviction.

Don't read. It is important that you know your subject well enough to speak spontaneously. You may like to use crib notes; but if you do, ensure that they are only headings on small cards to prevent you wandering off the point. If you are clever, you can make your visual aids serve this purpose for you – giving you signals about what to say next.

Make your audience enjoy themselves. Ask them questions, invite comment, inject humour and generally help them to listen. Good working models are very helpful, both to explain a technical system, and also to break the ice – but you must ensure that they are large enough to be seen from the back of a large lecture theatre. Don't, however, turn it into a circus show – be discrete and only use the models and gestures that help. Ignore those that turn it into a stage performance.

Practise beforehand. Speaking into a audio recorder, a camera or even a mirror should be sufficient to allow you to adapt any mannerisms which a) are intrusive b) you didn't know you had c) you need in order to explain complex matters. Speaking to a completely naïve audience (mother, father, brother, sister?) should teach you whether specific areas require more detailed explanations and you can concentrate on them. If a subject area persistently causes problems in understanding, consider the possibility of an additional model.

Organise yourself. Remember the golden rules of speaking – say what you are going to say, say it, say what you have said. Ensure that the audience can follow your arguments and that your models work and your visual aids are organised, legible and in the correct order. Recap at the end of each section even if there is a simple message to be conveyed. Always try to keep the audience interested and entertained.

AUDIO – VISUAL AIDS

There are many different types of visual aids that you can use. However, it is unwise to get carried away with technology and to use them just because they exist. It is vitally important to use them sparingly but intelligently and that they are good. Bad or badly used visual aids can spoil an otherwise good presentation but clear, uncomplicated, carefully used visual aids can improve a mediocre performance.

One other very important visual aid is a synopsis of your presentation. This is the first item relating to your presentation that the Judges will see – therefore it should have impact.

THE COMPETITION

Having outlined a series of general principles, it is important to try to relate these to the competition itself. These notes are backed up by personal experience of both judging at Heats and observing at the old style Semi Finals & Finals. We hope that they will be useful.

1. The Introduction

Try to imagine that you are giving a presentation to three or four complete strangers and that you have to convince them of the importance of your project. The most significant impression is the first one – therefore be confident and presentable. This latter means taking care with your appearance – even though you might think at heat level that most of the audience will be your student colleagues. Try to dress as though you are attending a job interview – not casual trousers and trainers! In addition, have all your visual material organised and ready to place on the front bench or lectern – thus appearing confident.

Ensure that your introduction is crisp and positive. Explain clearly who you are, the title of the project, where you undertook the work (including a sponsorship company if applicable) and where you are now working (if applicable).

Then, pause and give a brief and clear explanation of your project. This should include showing what it is about, what is it for, what is the end point and what are the practical applications. Maybe an Powerpoint slide would help here.

The other very important point at this stage is to organise both your mind and that of your audience i.e. explain what you are going to say, and in what order. You should aim to complement this at the end by summarising what you have said.

2. The Presentation

Your audience may be predominantly engineers but at least one of the Judges is likely to be a professional communicator. Therefore you must avoid 'talking – down' but also avoid engineering 'shorthand' e.g. 'FMS', 'MIG', 'HOTOL' without first explaining their meaning. This is not only a courtesy but it also ensures that your audience remains informed and interested.

You should aim to explain (i) the problem you set out to solve and the reasons why the path you chose was suitable (ii) the benefits, to appropriate parties, of any product you have designed (iii) the costs of making your product/implementing your improvements and a cost/benefit analysis; (iv) the possibility/probability of a relevant market; (v) any restraints that could be imposed from aspects of law, safety, environment, producer/user reaction. It is possible, however, that not all these points will be relevant to your project.

You will achieve this easily if you have spent time in preparation. You will know your subject better than anyone else in the room, so your greatest difficulty will be getting your message across in the time available. You will find that a 20 minute limit for speaking will be imposed – you should therefore aim to use the 20 minutes almost exactly as you could be penalised for under – or over-running. You will only achieve this by practise – but always try to practice with an audience, especially if you will have a tendency to speak too quickly. Speak confidently, speak to the audience (eye contact is also important), and speak slowly and clearly. Don't mumble into your notes.

There are other positive spin-offs to practising. You have already been advised to use headings on cards as crib notes – these can be significantly refined and reduced as you become more acquainted with your talk. You will also be able to determine whether any additional visual aids are needed.

Be very careful in your use of visual aids. Too often, competitors lower the lights for their introductory slide and forget to raise them again!

Remember that the audience will lose interest in a disembodied voice. Raise the lights when you are not directly referring to the slide and regain contact with the audience. Check any videos or sound embedded in a presentation work beforehand by testing on the system if possible.

The form of the visual aids is very significant. The best one, if it is possible, is the actual item you are discussing – or scaled-up model if it is a small scale artefact. Show how it works – ask your supervisor or a friend to help if doing it yourself is either awkward or distracting. Using slides require careful preparation. They must be visible from the back of the room, must be clear and uncomplicated and without avoidable errors such as spelling mistakes. Judges and audiences can become distracted by poor grammar and spelling. Don't put up a slide covered in formulae or equations – find a simple way of expressing the same thing. If you show graphs or histograms, ensure they are clear and well labelled. Always remember the aim of visual aids – they are to help your audience, not to act as a crutch for you. Images are generally best to talk over as they are not distracting but allow the points you say to be backed up.

Avoid giving the audience too much information in too short a time – both visually and verbally. Give them time to absorb your comments and to ponder over any complex issues. Make a point of both asking and inviting questions – it could help you when the Judges question you later. It also helps the audience understand your talk if they have had to answer questions themselves in their own minds – and have a slight pause in which to do this. Remember – you are in control.

3 The Conclusion

If you have several important points you want the audience to note, feed them back at the end, slowly and emphatically. In other words, summarise what you have said. You may find a visual aid is useful here.

Remember that the last point you make will probably be the best remembered by the audience. Make your ending hit home.

4 The Questions

The competition allows for the Judges to ask questions for a further 10 minutes. It is therefore important that you can refer back to them – or even have one or two extra ones in hand if you have invited questions in a particular area. Engineers can tend to ask questions which are both specifically technical and refer to cost benefits, patenting, marketing etc. Non-technical Judges are more likely to ask you to explain a technique e.g. holography in very basic terms – this is important and you should not be tempted to sigh and talk down to them!

Whatever is asked, don't be afraid to say you don't know or explain why you didn't consider the problem (e.g. time, facilities available etc). The most important feature is to show them that you are interested in your project. You could even have some hidden slides to back up answers.

SUMMARY

These notes are intended as a guide only from someone sitting at the receiving end and you may disagree with some of the comments. However, study the marking scheme carefully and consider why these points are made. These notes are widely circulated and you could, therefore, be competing with others who have received similar advice – and all will take away varying messages.

However you tackle the competition, look forward to the £300 first prize!!

We wish you the very best of luck.

SPEAK OUT FOR ENGINEERING

WHAT ARE THE JUDGES LOOKING FOR?

The following notes were prepared by a judge who attended regional heats for a number of years. These give an indication of what he was looking for – other judges have their own ideas and these will come out in the questioning at the end of your presentation.

These notes may help you to be among the winners.

A BRIEF AND CLEAR EXPLANATION OF YOUR PROJECT

- What is it about?
- What is it for?
- What is the end in view?
- What are the practical applications?

THE PROBLEM

- The steps you took towards a solution.
- Is it the only solution?
- If not, your reasons for selecting this solution?

THE BENEFITS

- Who is going to benefit
- How?
- Why?

THE COST

- Have you found out?
- Does the cost negate the benefit
- Have you considered the market?

RESTRAINTS

- Have you considered legal/safety requirements?
- Environmental effect?
- Producer/user reaction?

These are just some of the thoughts which crossed his mind. Some may not necessarily apply to your and in a short 20 minutes you do not have time to go into detail. However, as a frame work you might do worse.

YOUR PRESENTATION

Remember, it is a presentation. You are not giving a lecture, you are not reading a paper, you are not being examined by people who already know what you are talking about. You are 'selling' yourself and your ideas to three or four complete strangers of whom may be technically illiterate.

BE PRESENTABLE

Jeans and a T-shirt are all very well but they won't impress the judges – or your future managing director.

BE HEARD

Speak up and with confidence. Don't mumble into your notes, and if you have to read, try to hide the fact.

BE SEEN

Your impact on the audience depends on their seeing as well as hearing you. If you lower the lights for a projection, get them up again as soon as possible.

To find out more about your event you will need to contact your local organiser. Events and contacts are usually listed on the near you pages of the website.

<http://nearyou.imeche.org/near-you>

Institution of Mechanical Engineers is a registered charity number 206882

SPEAK OUT FOR ENGINEERING - GUIDELINES FOR JUDGES

Quality of Presentation	Marks	Technical Content	Marks
<p>1. Structure and content of presentation</p> <p>i. Does the contestant introduce his/her topic clearly and simply state the purpose or objective of the project? Does he/she show a clear understanding of the need for the project? (10 Marks)</p> <p>ii. Does the contestant clearly state and logically develop the detailed description of his/her work? (10 Marks)</p> <p>iii. Are the key messages communicated effectively (including the summary/findings?) Does the contestant explain how the work could be exploited or developed further? (10 Marks)</p>	30	<p>1. Complexity of technical content</p> <p>i. Complexity/Novelty/Interest of technical problem attempted (10 Marks).</p>	10
		Technical Content sub total	10
<p>2. Effective use of presentation material</p> <p>i. Is the supporting presentation material used effectively in support of the oral presentation? (15 Marks)</p>	15	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p><u>COMMUNICATION KEY WORDS</u></p> <p>EYE CONTACT AUDIBILITY MODULATION INTEREST RELIANCE ON NOTES CHARISMA ENTHUSIAM</p> </div>	
<p>3. Quality of presentation material</p> <p>i. Are slides/videos/simulations/models clear, neat and in good working order? (15 Marks)</p>	15		
<p>4. Quality of preparation including handling of questions</p> <p>i. How well planned and rehearsed was the presentation? (10 Marks)</p> <p>ii. How well did he/she handle the question session? (10 Marks)</p>	20		

5. Presentation style			
i. Does the competitor give an engaging presentation? (i.e. quality of delivery, personal flair, charisma). (10 Marks)	10		
Quality of Presentation Sub Total	90	<u>OVERALL TOTAL</u>	100

Remember you are looking for the person who can **COMMUNICATE TO ALL THE AUDIENCE**

	Maximum Marks	Candidate 1	Candidate 2	Candidate 3	Candidate 4	Candidate 5	Candidate 6
Quality of Presentation							
Structure and content of presentation	30						
Effective use of presentation material	15						
Quality of presentation material	15						
Quality of preparation including handling of questions	20						
Presentation style	10						
TOTAL MARKS FOR PRESENTATION	90						
TECHNICAL CONTENT							
Complexity of technical Content	10						
TOTAL MARKS FOR TECHNICAL CONTENT	10						
<u>CANDIDATE'S TOTAL MARKS</u>	100						