

Miss Margaret Jean Denny

Physics at Lincoln Christ's Hospital Girls' High School

Picture Series No 15

From the Garton Archive

Compiled by Peter Harrod

November 2025



This charming photograph of a physics lesson at Lincoln Christ's Hospital Girls' High School (LHS) provides an opportunity to investigate the subject at the School and to consider why so few girls choose to study the subject at A-level and beyond. The centre piece is a short case study of one LHS pupil, Josephine Skelton (m. Parry) who bucked the trend. The photograph was taken at Lincoln Christ's Hospital Girls' High School (LHS) in 1959 and shows the lower fourth class beavering away in the physics

laboratory on their assigned task. I am grateful to Old Girls of the School for sending me their names:

Back row, left to right: Janice Priestley, Janet Wright, Julie Pattinson, Jean Holmes, Anne Wroughton, Judith Lees, **Miss Denny (teacher)**

Middle row: Margaret Whitby, Joan Melton, Helena Purek, Gill Wright, Virginia ? Sian Du Boisson, Shirley Derry.

Front row: Suzanne Tumman, Christine Heathershaw, Terry Myhill, Susan Panton, Kathlyn Saul.

Remember those satchels? Those who attended school during that period will recall those familiar bags which apparently are now widely available as 'retro' handbags. I found out by discreet enquiries that they would typically contain a rough book, a subject 'best' book (dark green hardback in the case of physics), a pencil case, a mandatory Osmiroid pen available from Ruddocks (sadly no longer) and a bottle of blue-back ink which was also mandatory. I wondered about any personal items but was told that only regulation school equipment would be permitted, and under no circumstances were magazines or even works of fiction allowed in school. This brought a vivid memory to my mind of the *Titbits* and *Reveille* magazines which we carefully concealed in our desks at Lincoln School. Being caught reading one of those somewhat risqué mags would inevitably lead to a Saturday afternoon detention, or perhaps a few strategically placed strokes from a cane. Needless to say, the masters were quite happy to confiscate the offending magazines! I recall reading in one magazine that Marilyn Munroe described movie kisses as 'tasting like boiled cabbage'! Now why should I remember that 'titbit' of information? Perhaps I should have been paying more attention to French irregular verbs! (See Note Two)

The physics teacher in the photograph, Miss Margaret Denny, seen helping a pupil on the far right of the back row of the photograph, had been welcomed onto the staff the previous year by Headmistress Isobel Cleave. She had attended the prestigious Berkhamsted School, an independent day and boarding school for girls in Hertfordshire, before going to Nottingham University in 1952 to read chemistry, physics and maths followed by a year of teacher-training. With such a growing CV it is not surprising that she left LHS in 1962 to be Head of Chemistry at Bishop Fox's School in Taunton. Miss Cleave commented in a Speech Day report: 'If only science teachers could be chained to their posts!' The recruitment and retention of physics teachers was an issue in 1959 and still is today.

In the LHS Book of Memories, art teacher Miss Taylor recalled that there were many alterations at the School during her time including the new physics lab shown in the photo which was built by combining a classroom with half the former art room. She had been consulted about the design, contents and decor of the room and made her recommendations to the architect. However, imagine her surprise when she went into the room during the summer holidays where she found beautifully craftsman-made benches with drawers and cupboards beneath... but no sinks! The joiner had to

hurriedly sacrifice some of his immaculate handiwork to make room for sinks and by September the lab was fit for purpose!

Physics was not a popular subject for girls in 1959 largely due to factors such as a lack of confidence and social stereotypes about the subject being male dominated. Little has changed. Statistics show that girls make up only 23 per cent of students studying A-level Physics in the UK. Thus, girls remain significantly under-represented in A-level physics, a trend that has persisted for over two decades. Related to this phenomenon, research has shown that girls in single sex schools are more likely to study A-level physics, suggesting that mixed-gender schools may contribute to the disparity. However, this can hardly be claimed to be a viable solution to the problem as there are too many positive reasons in today's society and educational system for mixed gender classes.

Highgate School in London is one institution that is attempting to address the imbalance by creating a forum for students to meet female role-models who have studied physics at university and have gone on to build successful careers. University Technical Colleges may also have a role to play, including the one in Lincoln housed in the former LHS building on Lindum Road.

The scale of the problem is also found with reference to a project called 'Physics for Girls'. The project, aimed at girls aged 11-12, encourages them to embrace the subject and unlock their full potential. It is designed to empower girls with knowledge, skills and opportunities crucial for personal and academic growth, thus paving the way for university and employment. It is part of the wider STEM Learning project which focuses on science, technology, engineering and maths for girls. It also provides initiatives, resources, and research aimed at increasing girls' participation and success in the subject often stereotyped as a subject for boys. Despite girls achieving similar grades in physics as boys at GCSE and A-level, fewer choose to study it at higher levels due to factors such as social attitudes, a lack of encouraging experiences in mixed-gender environments, and insufficient support from teachers and parents. Efforts to address this problem include promoting female role models, creating supportive school environments, and challenging misconceptions through campaigns like the Institute of Physics 'Limit Less' campaign which challenges the notion that physics is a subject only for boys. An article in *The Guardian* also recommends that meeting professionals who have become female physicists can help dispel myths and provide reassurance.

Returning once more to physics at LHS, it is not entirely clear when the subject first appeared on the curriculum but, by scrutinising the pages of the School magazines, it is likely that 1958 was the first year that the subject was taught on the premises. Prior to that, for at least one year and possibly longer, a few pupils were taught physics at the City School in Lincoln which was the alternative boys' grammar school to Lincoln School. I would be grateful to hear from any former pupils who can either confirm that or provide me with new or additional information.

What is clear is that there were no students who left LHS in 1959 to study physics. However, the following year Mary Chance went on to study physics and maths at Reading University, and in 1962 Josephine Skelton (m. Parry) won a place at Queen

Mary College, in the University of London to read physics. I can find no evidence that Mary went on to graduate, but records show that Josephine graduated with an Upper Second-Class Honours BSc degree in the subject. Those were the only two pupils who proceeded to study physics at universities during Miss Denny's brief career at LHS. Surprisingly, because it was so unprecedented, no mention is made of either of those pupils in Headmistress Cleave's report on Speech Day. However, Miss Cleave did inform her audience that interest in science subjects was certainly growing, despite the fact that she, herself, was "...an antediluvian ignoramus in all matters scientific"! She also commented that interest was encouraged by the new Science Club which the girls were running themselves "most efficiently". Miss Cleave also mentioned Carol Parsons in her 1962 report. Carol gained a Grade One in all her A-level papers in Chemistry and both she and Miss Denny were publicly congratulated on their successes.

Thanks to Lincoln Christ's Hospital Lincolnians secretary Jane Burgess's wide network of former pupils, we have been able to contact Josephine Skelton (m. Parry) who has most kindly sent us details of her time at LHS and her subsequent career. She wrote that she studied maths, chemistry and physics at the School and left after a third year at the City School in Lincoln to study extra maths. As indicated above, it was not unusual for those studying sciences to have some lessons at the City School.

Jo then took up her place at Queen Mary College where she read physics with ancillary maths. On graduating in August 1965, she joined ICI Fibres as one of the first female Technical Development Officers to be employed by the company. She was directly involved with the manufacturing, quarry and mining industries in solving technical problems associated with man-made fibres. That included on-site visits to companies using conveyer belts for both heavy and light haulage.

After relocation to the North-East, Jo was employed for three years from 1967 to 1970 at Blaydon Bilateral School in County Durham, teaching Advanced and Scholarship level mathematics. For ten months of her time at the school she was acting Head of Department covering the illness of the permanent post holder. Jo then took a career break to bring up her three children before being employed as a Lecturer at Glenrothes and Buckhaven Technical College, Fife from Sept 1981 to August 1985. She was responsible for teaching Mathematics and Statistics to students in a broad ability and age range in secondary, further and higher educational establishments.

On moving to Nottingham in 1985 Jo joined Hollygirt School, a small independent school in the city, teaching Mathematics in the Senior School on a part-time basis. At the same time, she joined Nottingham Trent University (formerly Nottingham Polytechnic) as a lecturer in statistics in the Mathematics, Statistics and Operational Research Department. She had responsibility for administration, management and assessment of lectures and seminars for up to eighty students on a wide range of courses. She retired in 2003.

Jo seemed surprised when I was able to contact her and told her that she was one of a handful of students who studied physics at LHS and went on to study the subject at university. Although her subsequent career path took her in the direction of mathematics and statistics teaching, she remains the only LHS physics graduate

recorded on the Honours Boards now housed in the former Lincoln School Hall at Lincoln Christ's Hospital School. She was one of the few who bucked the trend: a remarkable achievement... and statistic!

Acknowledgements

I am indebted to LHS alumna Jo Skelton (m. Parry) for sending a memoir of her career.

Grateful thanks are also due to LHS alumnae Gill Wright and Carole Sharpe (née Codd) for divulging the contents of their satchels, and to Christine Rossington (née Coates) for her contribution.

Note One

A shorter version of this article has appeared in the November edition of the *Lincoln Independent*.

Note Two

This paragraph, slightly amended, was 'borrowed' from *Picture of the Month No 85* which featured a physics lesson taught by Mrs Dora Taylor.

Appendix

What can you remember from your own physics lessons? Here is a selection of exam questions from a 1959 O-level paper. Please scroll down if necessary. How did you do? I felt a strong empathy with Headmistress Isobel Cleave!

530/1

530/1

ORD. LEVEL
THEORETICAL

PHYSICS

Tuesday

24 NOV. 1959

2½ hours

B

UNIVERSITY OF CAMBRIDGE

LOCAL EXAMINATIONS SYNDICATE

GENERAL CERTIFICATE OF EDUCATION

PHYSICS

ORDINARY LEVEL

THEORETICAL PAPER

(Two hours and a half)

Answer all the questions in Part I and five questions from Part II, including at least one question from each of the Sections A, B, C.

(Mathematical Tables are provided.)

PART I

Answer this part on the printed sheet which is attached.

Candidates are advised to spend not more than half an hour answering Part I.

PART II

Answer five questions including at least one question from each Section.

$$[g = 32 \text{ ft./sec.}^2]$$

SECTION A

1. State the Principle of Archimedes, and explain how you would verify it for a liquid other than water.

A balloon which has a volume of 10 cubic metres contains hydrogen. The fabric weighs 500 gm. Calculate the tension in a vertical string which tethers the balloon to the ground, the temperature being 15° C. Calculate also, the change in tension if the temperature rises 20 deg. C. Assume that the volume of the balloon does not change with temperature.

[Density of air at 15° C. = 1.223 gm./litre, and the density of hydrogen at 15° C. = 0.084 gm./litre.]

2. Define the terms *mechanical advantage*, *velocity ratio* and *efficiency*, and prove the relation between them.

Draw a diagram of a three-sheaf pulley block and tackle, showing where the load is attached and where the effort is applied. What is the velocity ratio?

If the efficiency of the system is 80 %, calculate (a) the effort required to lift a load of 56 lb., (b) that part of the effort which is not used in lifting the load of 56 lb. but is used in overcoming friction and the weight of the moving parts.

3. Answer **two** of the following parts (a), (b), (c):

(a) A steam shovel driven by a 4 H.P. engine lifts 200 tons of gravel an hour to a height of 10 ft. How much work is lost per hour? [1 H.P. = 550 ft.-lb./sec.]

(b) A diving bell has a volume of 200 cubic metres. Atmospheric pressure is 76.0 cm. of mercury. What space will the air in the bell occupy when the level of the water in the diving bell is 10 metres from the surface of sea water?

[Density of sea water = 1.08 gm./c.c.; density of mercury = 13.6 gm./c.c.]

(c) The proposed course and ground speed of an aeroplane are due north and 100 m.p.h. respectively. A steady wind of 40 m.p.h. is blowing from 60° east of north. Find the course the pilot must set and his air speed.

SECTION B

4. When a thermometer bulb was placed into hot water suddenly, the liquid level was seen to fall slightly and then to rise rapidly. Give an explanation of these effects.

Draw and describe in detail a maximum and minimum thermometer.

Convert 98.5° F. to ° C. and 46° C. to ° F.

