Ontario Association of Physics Teachers

NEWSLETTER

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OAPT ANNUAL CONFERENCE, 1990

It is traditional for our association to hold its annual conference at an Ontario university during the month of June. It is the responsibility of the vice-president to organize the conference. In 1990 , the conference will be organized by Nigel Hedgecock at the University of Windsor, June 17 - 19.

This will be the 12th annual conference of the OAPT. Following is a list of previous conferences.

1989 University of Western Ontario
1988 University of Toronto (Scarborough)
1987 Laurentian University
1986 University of Guelph
1985 Royal Military College
1984 University of Waterloo
1983 McMaster University
1982 University of Western Ontario
1981 University of Toronto
1980 Trent University
1979 University of Guelph

RASC CELEBRATES CENTENNIAL

The Royal Astronomical Society of Canada celebrates its 100th anniversary in 1990. As usual, The Observer's Handbook compiles current information about the sky for amateur astronomers. It also includes a wealth of data charts and other useful reference material. The 1990 edition features a fascinating cover photograph showing the David Dunlap Observatory as it appeared in 1935 and a brief history of the Society written by Helen Hogg.

Membership includes a copy of the OBSERVER'S HANDBOOK, the bimonthly JOURNAL and NATIONAL NEWSLETTER. The national office is located at 136 Dupont Street, Toronto, Ontario, M5R 1V2, telephone (416) 924 7973.

OAPT is affiliated with the AAPT

OAPT PHYSICS CONTEST

George Kelly and his committee are presently preparing the 1990 version of the OAPT Physics Contest. The contest will be written on Tuesday, May 8, 1990. It is designed for students presently studying the Grade 12 Physics course or for students who will be studying it during the second semester.

CONTEST CHAIRPERSON NEEDED

In its early days, the OAPT contest was set and administered by a single person, first Doug Fox and then Don Murphy. At the annual meeting in 1987, George Kelly was appointed to a three-year term as contest chairperson, with power to choose his own committee. The committee helps to set policy, select appropriate test items, and proof read the final version. However, the administration has been handled by George with expert assistance from the Physics Department at The University of Guelph. His term will expire in June and our association is looking for a replacement. Any interested person should contact George or a member of the executive.

MEMBERSHIP FEES

If you have not renewed your membership, this is your last chance to do so at the archaic price of $5.00. As of January, 1990, the annual membership fee will rise to $8.00, the first increase since 1983. To renew, you may use the coupon below.

Name _____

Address _____

$5.00, payable to the OAPT

Send to: Professor Ernie McFarland,
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The D.C. Motor

by **Peter Scovil**
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Introduction

Have you had difficulties explaining to students the complexities of the D.C. motor? Try simplifying the concept by using a turntable, such as from the old PSSC moment of inertia experiment set. It is large enough to fit two bar magnets end to end across it. You then hold like poles of two other bar magnets at each end, letting the turntable rotate away. Opposite poles meet (Fig. 1). What must be done to keep the rotation going? Students give some very interesting suggestions. These can be tested right away. The need for continually alternating poles can then be shown to be the best solution. The obvious problem of worn-out wrists from switching the poles leads the class directly into the need for commutators and brushes.

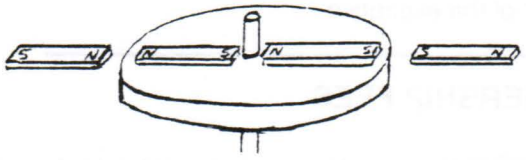

Fig. 1 Turntable motor

Overhead Projection Model

Once the students have the introductory idea, you can show them the details of operation using an overhead projection model like the one illustrated (Fig. 2). The armature coil is mounted using a brad so that it is free to rotate. One end of it is marked. Once the class is familiar with the main parts, place a blank acetate over the armature, and draw in the direction of electron flow from the dry cells, through the brush, onto the commutator, and round the coil. The students can easily predict the polarity and rotation. You can move the armature accordingly. Each step can be shown, drawing in electron flow for each armature position on a new acetate sheet.

The first time through, try to line up the armature to match the diagrams in the current text. (Ed. question — pun intended?) However, it is easy to change the initial conditions and see if the students can predict the rotation. You can make a similar overhead model for the A.C. generator.

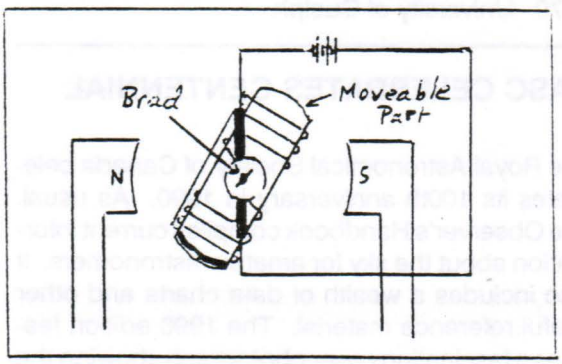

Fig. 2 Overhead Model of D.C. Motor

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Submissions describing demonstrations will be gladly received by the column editor.