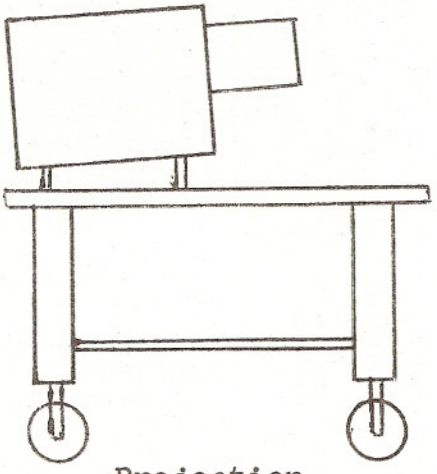
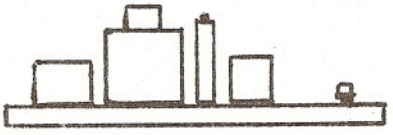
B-H apparatus: E-5 S-4
Oscilloscope : M-cart

2A - 4E



Projection oscilloscope



B-H apparatus

Set DuMont Type 250-AH projection oscilloscope directly in front of the lecture table and project image on wall screen. The high voltage supply should be set at about 12,000 volts. The panel controls should be set as shown below.

Sync Amp: *	Y Amp: 35	X Sel: AC Amp
Y Sel: AC Amp	Y Atten: 10	X Amp: 45
Sync Sel: *	Sweep Ver: *	X Atten: 1
Calib: Y Input	Sw-Time: *	

* Nonoperative. The setting is immaterial.

The B-H apparatus is designed so that the drop in potential across a resistor in the primary of the transformer is proportional to,and in phase with, H. The drop in potential across a capacitor in the secondary, which has a reactance quite small as compared to the resistance in the secondary, is proportional to, and in phase with, B.

With the switch on the B-H apparatus in the "off" position, set the Variac dial at 25, connect the H output of the apparatus to the X input of the oscilloscope, and connect the B output of the apparatus to the Y input of the oscilloscope. Turn on the oscilloscope, slip the projection lens slightly forward in its ring mounting so that the screen can be seen, and focus and center the spot on the oscilloscope screen. Now replace the projection lens to its normal position.

Darken the room completely and, the dial of the Variac having previously been set at 25, turn on the switch of the B-H apparatus. A good hysteresis loop should appear on the screen. (If the loop is a mirror image of that usually seen, reverse either the H or the B input.) For the purpose of showing how the loop depends upon the maximum value of H applied, the setting of the dial on the Variac can be varied between 15 and 35. Observe the effect of saturation at the higher maximum values of H. (See Note.)

Note: A stop has been placed on the Variac so that the dial setting cannot exceed approximately 40. It is necessary to overload somewhat the 25-volt primary of the transformer in order to show the effect of saturation. The stop is to avoid overloading it too much.