



Radford Labpacks: the end of an era

The Radford Labpack was the definitive portable power supply of the early 60s and led to a host of others with similar design features. However, we do not expect most of the original Radfords to survive into the next millennium, although a surprising number are in use in schools.

All schools which still use Radford Labpacks are strongly advised to take them out of service and replace them with modern equivalents at once, or, if necessary, as part of a planned and phased programme. The main reason for this advice is that 40 year-old electrical items generally fail to meet current safe standards of design and the materials have often deteriorated to unacceptable levels. This is causing an increasing number of problems, especially in the last couple of years, including some instances of severe electric shock to Labpack users.

The various Labpacks were all based on the same steel box. This similarity of basic design makes identification of particular models difficult. The N59R model was designed to give 0 - 25 V ac or dc, whilst the type 59 gave 300 V dc as well as low voltage outputs. The latter model has caused more problems than the former in terms of insulation breakdown and electric shock hazard, but all models are now best replaced.

Radford Labpacks date back to 1959 and defects they have exhibited include:

- mains sockets which are easily opened;
- mains voltage on exterior voltage selectors;
- poor earth bonding;
- mains voltage on exterior fuse holders;
- neon indicators connected between live and earth; and
- poor mains leads and strain relief arrangements.

In addition, and because many models have been about for so long, there have been alterations made by repairers, technicians or teachers over the years to the internal wiring, often in an attempt to make the power pack more pupil-proof. This means that external connectors may bear little relation to internal wiring! Opening up some old Labpacks may reveal an apparently trouble-free wiring loom, transformer and connections or it may show horrifying melt-downs leading to 230 V ac being available on 6.3 V ac terminals. Any department still using Radford Labpacks for HT supplies is strongly advised to do so no longer. Any other models need careful internal inspection, with advice from CLEAPSS or SSERC (if your school is in membership). If the inspection shows signs of overheating, insulation breakdown or previous in-house alterations, then the best advice is also to take this unit out of service.

Any power supply made by Radford still in use by the year 2000 would give cause for concern rather than rejoicing. No matter how much care has been taken, old age will have taken its toll on 40 year-old materials, while vintage technology is likely to reduce protection for the user to a now unacceptable level. Low voltage power

supplies from other manufacturers which are over 20 years old should be regarded as suspect and subjected to tests similar to those suggested for Radfords

¹ Information which has become available since this note was first drafted suggests that, because the original Labpacks were so solidly built, for certain types of fault re-building to modern standards of electrical safety may, in fact, be an economic proposition. Free advice is available from Harding Scientific Instruments, 163 West Malvern Road, Malvern, Worcs, WR14 4AY.