Rainbow," "You'll Never Walk Alone," "Back Home Again in Indiana," "Carousel Waltz," "Lover," and four songs from *Showboat*.

Playing includes plenty of registration changes. Tony is especially partial to a smooth brass reed. The rhythm tunes are done in upbeat "intermission" style, with interesting key changes but without melody-changing "rides." He makes like a merry-go-round organ for "Carousel," but always with musicality given first consideration. *Showboat* has come up frequently of late on releases and re-releases. The selections provide lots of scope for an organist to exercise imagination on, no two arriving at the same musical conclusions. Tony's approach is quite different from those of Maria Kumagai and George Wright, but the end product is both dramatic and ear catching; he caught the spirit of the operetta, and while playing a concert, as the applause reveals.

The Regent organ sounds fine. It provides plenty of tonal variety throughout. Incidentally, it now holds forth in a school auditorium in Adelaide, where it was installed by Theatre Organ Society of Australia members. Recording is good and the review pressing very smooth and pop-free. Jacket notes are minimal, the space being occupied by photos of the Regent's interior, a truly lovely house of its kind.

Yes, the album provides ample proof the theatre organ is alive and well in Australia. □

Choosing The Proper Solid-State Rectifier

by John Persick

Having worked professionally on pipe organs and being an electronics technician, I have read with interest the technical articles in THEATRE ORGAN and felt that the area of DC power supplies and, more specifically, solid-state power supplies, has been generally overlooked. Here, is an easy method to determine the rectifier size that is proper for a pipe organ.

Originally, unit theatre pipe organs were equipped with blower-driven DC generators, often rated at 20-30 amperes at 12 volts. By the nature of their construction they were able to endure much overloading and abuse with relatively little, if any, permanent damage.

Today, the preferred power source is the rectifier which is extremely reliable and requires virtually no maintenance, providing it is used properly. However, rectifiers are highly sensitive units and can easily be permanently damaged or destroyed if exposed to the overloading frequently found in cases where generators were employed. Consequently, one must equip a pipe organ with a rectifier rated higher than the original generator. One can determine a proper rectifier size by considering several important items. The most important are the electrical size of the magnets used in the organ and the current draw which is determined by the maximum number of these magnets that can normally be played simultaneously.

Theatre organ magnets are normally found from about 165 to 400 ohms. Magnets of the 165-ohm variety were used in my experiments because of their high current draw as opposed to the lower current draw of the 400-ohm magnets. Using a 12 volt DC supply, the power draw of one magnet was 0.073 amperes.

Bearing this calculation in mind, it was figured that a 101-note flute rank unified at 16', 8', 4', 2-2/3', 2', 1-3/5' and 1' with sub and super couplers engaged might play as many as 32 to 36 notes under extreme demands. More practically speaking, the average unit rank would be 85 pipes or less (depending on the brand of organ) and would play 22 to 26 notes under extremes.

Using these figures, we multiply the maximum number of playing notes by the current draw (in amperes) of a single magnet to get the current draw per rank. The current draw for the 101-note flute was 2.63 amperes while for the 85-note rank the draw was 1.90 amperes. Multiplying one of these figures by the number of ranks in the organ gives one the minimum output current rating of the rectifier to be used.

Figuring the number of ranks also includes figuring tonal percussions, the relays and toy counter. Each manual relay (e.g. solo, great, accompaniment on a 3-manual) counts as a rank. For every three small (30-37 notes) tonal percussions (xylophone, glockenspiel) figure one rank and for each instrument 49 notes and over (marimba, piano, chrysoglott) figure yet another rank. Finally, for every 22-26 stop tabs (which operate relay magnets) figure one more rank. Because a maximum of three or four nontonal instruments are usually used at one time, toy counters draw minute quantities of current and need not be included as a rank. The one exception would be a fire siren or large horn which could possibly draw 20 or more amperes and the rectifier would have to be able to stand up under this momentary surge. Whatever one's final amperage figure is, another 10 amperes should be added, for extreme playing conditions, to be completely safe.

The rectifier should be located as near the organ as possible to eliminate excess line drop. Sufficient size common wires, connected to clean and tight terminals, should be used.

Console lights should be on a separate power supply to eliminate dimming when chords are played.

Remember, it is easier (and cheaper) to obtain the right size rectifier in the beginning than to have to replace an underrated one that has burned out. □