

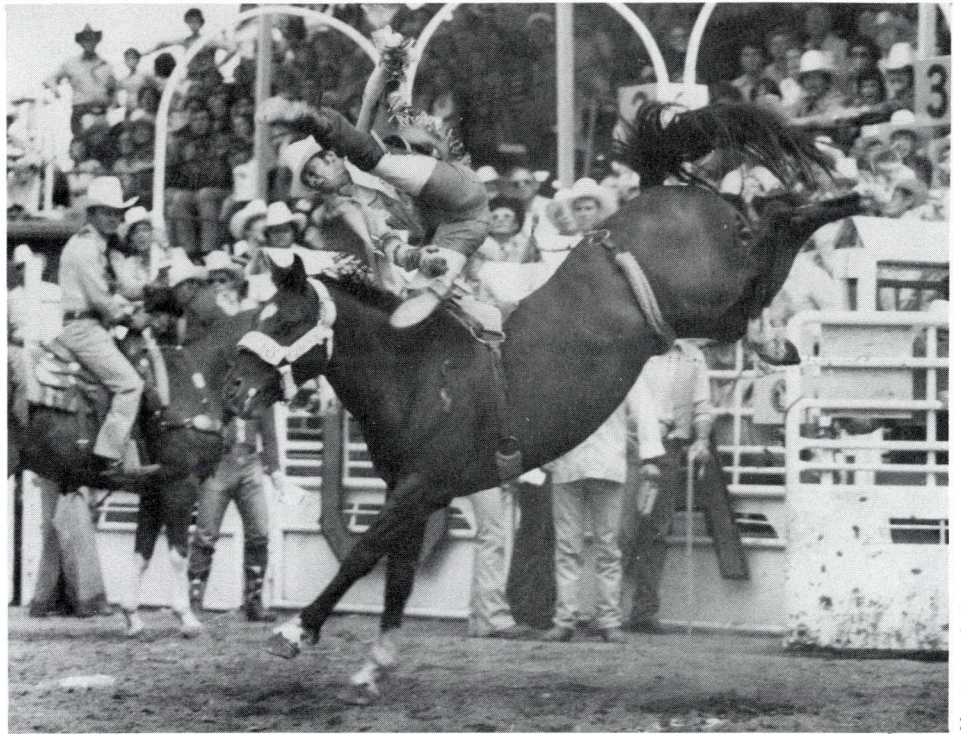
of exactly the correct curvature to match the characteristics of the eye. If the lens were to exhibit too much curvature, the patient would then find himself shortsighted; on the other hand, insufficient curvature would result in longsightedness. It is therefore necessary for the surgeon to possess an accurate measure of the distance between the front and the back of the eye before an operation takes place.

#### Method

The conventional method of making such a measurement is rather laborious and not without discomfort to the patient. In addition, it can be used only in those cases in which the diseased lens is transparent and is therefore impracticable in the case of patients having cataracts. Mr. Mortimer felt that this was a situation in which ultrasonics could be used with advantage. The technique is to employ ultrasound rather like an echo-sounder, since the time taken for a sound pulse to bounce from the back of the eye is directly related to the distance the echo travels. The instrument has a probe which produces a burst of ultrasound and also contains a sensor for detecting the returning echo. The probe, connected by a lead to a battery-powered processor, displays the eye measurement in digital form. The whole instrument is small enough to be carried in a doctor's pocket. The tip of the probe is placed on the surface of the eye and a short burst of ultrasound is emitted by exciting a piezo-electric crystal with an electrical current at about 70 volts. This sound burst travels in a straight line to the back of the eye, where it is reflected back along the same path. This echo is detected by the probe and the time delay between signal and echo is converted into a reading of length in millimetres between the back and front of the eye, which is then digitally displayed.

This instrument, which has the advantage of being relatively simple to operate and inexpensive to manufacture, bringing the accurate measurement of eye length within the reach of any doctor, is undergoing clinical trials with encouraging results. Following this trial period, the instrument will be licenced for manufacture.

#### Calgary Stampede bronc voted a world champion



Morrison photo

*Steve Dunham of Priddis, Alberta, takes off on Moon Rocket, world cham-*

*pion bronc, at last year's Calgary Stampede.*

Moon Rocket, one of the top horses at last summer's Calgary Stampede has soared to new heights.

The 13-year-old bay gelding was named the 1976 world champion bareback bronc by the men who rode him (or tried to) in a survey conducted annually by the Professional Rodeo Cowboys' Association.

The 20 highest money earners in the bareback event voted the title to Moon Rocket, adding that honour to the Canadian champion title awarded at the

1976 Calgary Stampede.

Moon Rocket is a real crowd-thriller, usually getting about five feet off the ground and kicking all the way.

"Cowboys really like to draw Moon Rocket," says Stampede rodeo director Graham O'Connor, "because, if they are able to ride him, they are guaranteed a good share of the prize money with his exciting style of bucking."

The Calgary Stampede raises rodeo stock and a herd of buffalo at a 21,000-acre ranch south of Hanna, Alberta.

#### Solar heated demonstration houses — contracts awarded

Contracts worth \$229,000 have been awarded for the design and installation of solar heating systems in 14 demonstration houses across Canada, announced Energy, Mines and Resources Minister Alastair Gillespie recently, whose department co-ordinates federal energy research and development.

The contracts were funded by the National Research Council as part of the Government's expanded energy research and development program.

"The 14 demonstration projects are

a major step in proving the technologic and economic viability of various solar heating systems under very different climatic conditions across Canada," said Mr. Gillespie.

"Research and development, particularly in new or renewable energy systems, will play a major role in meeting Canada's long-term energy needs. The Government is preparing for the future use of solar heating by funding such demonstration projects now," added Mr. Gillespie.