The Italian Cross Radio Telescope.

III. – Operation of the Telescope.

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Summary. — This paper follows after a while the first two papers of the same title describing the project of the antenna and the receiving system of the Italian Cross Radio Telescope. When these papers were published not all the technical problems relative to the system had been solved. Furthermore some improvements have been added to the original plans. The actual performance of the instrument can now be described in detail.

The system at the present stage consists only of a part of the originally planned telescope: the East section of the E-W arm and 320 meters (32 elements) of the N-S arm [1,2]. It is rather unlikely that the original plans will ever be completed. Nevertheless the operation as a T rather than as a cross antenna was found satisfactory. The phase stability between the two arms is sufficiently good and the reduction of the total receiving area is compensated by the better noise figure of the receivers now in use. The reduction in length of the N-S arm is however a crude cut-down from the original project, which did not find an adequate financial support.

Systematic delays in the construction are in fact the only reason for the delay between the planning and the operation of the telescope. It is a fact that operation of the instrument as a synthetic pencil beam radio telescope began only in December 1967.

In spite of this, the actual instrument represents a noticeable technical achievement. Its operation, as a matter of fact, is as complex as that of the system originally planned.

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[1] A. Braccesi and M. Ceccarelli: *Nuovo Cimento*, **23**, 208 (1962).
[2] G. Gelato, C. Rosatelli and G. Sinigaglia: *Nuovo Cimento*, **23**, 254 (1962).