Proposal Abstract K15(G71)

1. **Arms Control Problem:**
   Nuclear weapons - comprehensive test ban

2. **Verification Type:**
   Seismic sensors - extra-border stations

3. **Source:**
   Japan. "Working paper ... concerning the usefulness of the employment of ocean bottom seismographs and a universally acceptable means of determining the magnitude of seismic events...". CCD/345, 24 August 1971.
   See also: - "Working paper on problems in determining the body wave magnitude". CCD/339, 24 April 1973.

4. **Summary:**

Improved teleseismic capability requires that detection techniques be improved to match the level achieved by the recent development of better analytical methods. Japanese research suggests that the inherent limitations of detection capabilities of land based seismographs can be circumvented by extending the seismic network to the ocean floor. On the sea-bed background noise levels have been found to be less than half that of the quietest land sites. This quietness is neither affected by weather nor subject to seasonal changes. It is suspected that even a single ocean bottom station could detect seismic events at an equivalent sensitivity level to that of a fairly large array station on land. Such ocean bottom stations could, with improvements, be used to locate and identify seismic events.

Present instrumentation is such that seismographs can be sent to depths of several thousand meters and operated for two to five months without maintenance. Data is stored on magnetic tape and could be retrieved when necessary. Furthermore, there is no problem over intruding into sovereign territory if the instruments are placed below the high seas.

The working paper goes on to suggest in detail a possible universally acceptable means of determining the magnitude of seismic events.