

AccessionIndex: TCD-SCSS-U.20121208.047

Accession Date: 8-Dec-2012

Accession By: Prof.J.G.Byrne

Object name: Sliderule from Montebello atomic bomb tests, with instruction booklet

Vintage: c.1952

Synopsis: For measuring radiation-dose-rates for contamination produced by radioactive sea water, measured from the moment of explosion.

**Description:**

This item was used in Culham (Oxfordshire) for radiation-dose-rates. The case is marked "F.4394. Ex-Culham. SS. 3278. 13.8.53", i.e. registered on 13-Aug-1953.

It is not clear what links Culham c.1953 with radiation studies, except that the Royal Naval Air Station (RNAS) *HMS Hornbill* airfield was operational as part of the Fleet Air Arm in 1944-53, and a paratrooper, Carrick Watson, stated the Parachute Course Admin Unit (PCAU) was there, and showed photos of paratroopers beside the RNAS Culham Hospital Block [1][2][3]. Next door was *RAF Nuneham Park* Joint Air Reconnaissance Intelligence Centre based in the original Nuneham Park mansion [1].

The Culham fusion lab wasn't built until the 1960s. So how did this sliderule come to be used in Culham leading up to 1953?

In Fig.3 (on the back of the sliderule) it says: "measured from the moment of explosion". So this sliderule relates to atomic bomb tests. Fig.3 also says "for contamination produced by radioactive sea water ..." The first UK test was in Oct-1952 in a shallow bay on Trimouille Island, one of the Montebello Islands 80 miles off Western Australia. The next atomic bomb test was 1956, so this was used for the first test [4]. The British assembled a small fleet, so the Royal Navy was involved, and perhaps that's how RNAS Culham was involved. And six miles north was Harwell Atomic Energy Authority, where work was undertaken (e.g. by Dr. Cyril Leng Smith) under Sir John Cockroft on biological effects of radiation.

The item is a *RADIAC Slide Rule* for nuclear fission products produced for the Admiralty Research Laboratory, Teddington, in Feb-1952 by Blundell Rules Limited (B.R.L.), Luton, and includes a detailed booklet prepared by the Admiralty covering both the related theoretical background as well as practical examples of use. A very abbreviated set of these instructions is also on the reverse of the sliderule.

How Prof.Byrne acquired this sliderule and booklet may itself be interesting. Were it not for the small red "auction lot number" sticker, it might be thought that Prof.Ernest Walton (who with Cockroft won the Nobel Prize for splitting the atom) of the Physics Department of Trinity College Dublin donated it to Prof.Byrne, but not so.

Photographs courtesy Prof.J.G.Byrne, Dr.Arthur Hughes and Dr.Brian Coghlan.

The homepage for this catalog is at: <https://www.scss.tcd.ie/SCSSTreasuresCatalog/>  
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<a href="#">TCD-SCSS-U.20121208.047</a>	Sliderule from Montebello atomic bomb tests, with instruction booklet. For measuring radiation-dose-rates for contamination produced by radioactive sea water, measured from the moment of explosion, 1952.

### References:

1. Martin Strowger, *HMS Hornbill, Naval Air Station, Culham Park*. See:  
<http://www.aeolian-hall.myzen.co.uk/hornbill.html>  
Also see:  
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/sliderule/TCD-SCSS-U.20121208.047/HMS-Hornbill-NavalAirStation-CulhamPark-MartinStrowger.pdf>
2. Airborne Assault ParaData, *A living history of The Parachute Regiment and Airborne Forces*. See:  
<https://paradata.org.uk/media/25815?mediaSection=Photos&mediaItem=41737>  
Also see:  
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/sliderule/TCD-SCSS-U.20121208.047/CarrickWatson-in-a-Champ-PCAU-living-quarter-1950s.pdf>
3. Airborne Assault ParaData, *A living history of The Parachute Regiment and Airborne Forces*. See:  
<https://paradata.org.uk/media/25815?mediaSection=Photos&mediaItem=41630>  
Also see:  
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/sliderule/TCD-SCSS-U.20121208.047/Good-view-of-PCAU-Quarters-the-OldHospitalBlock-at-Culham-c1957.pdf>
4. Wikipedia, *Operation Hurricane*. See:  
[https://en.wikipedia.org/wiki/Operation\\_Hurricane](https://en.wikipedia.org/wiki/Operation_Hurricane)



Figure 1: TCD-SCSS-U.20121208.044-fig01

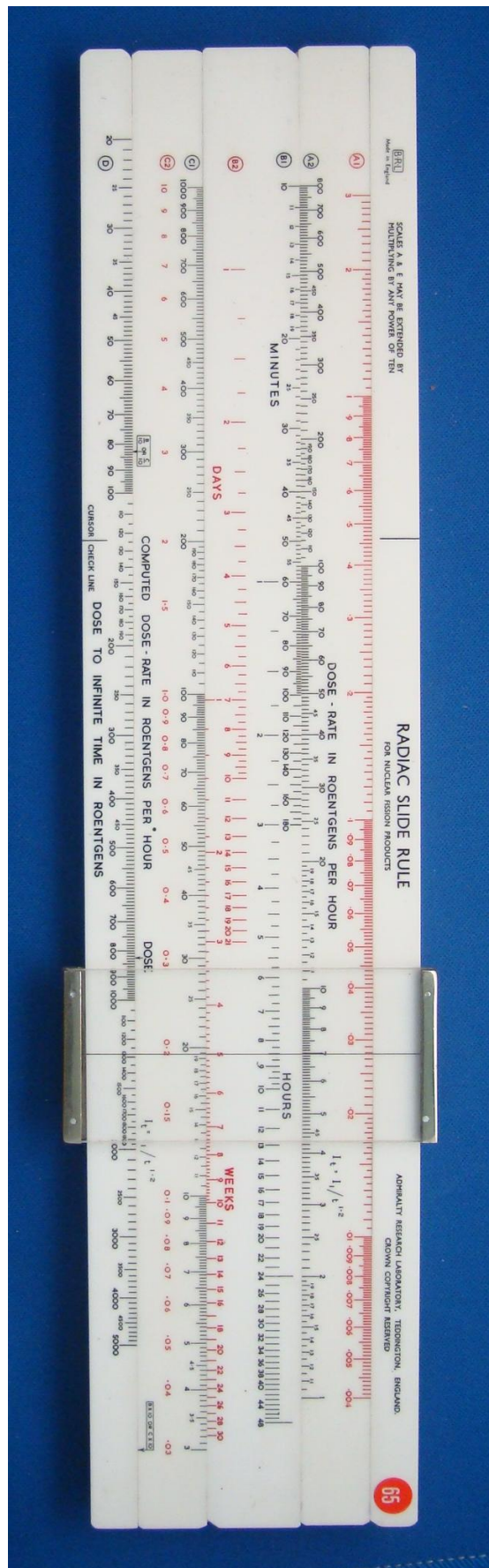


Figure 2: TCD-SCSS-U.20121208.044-fig02



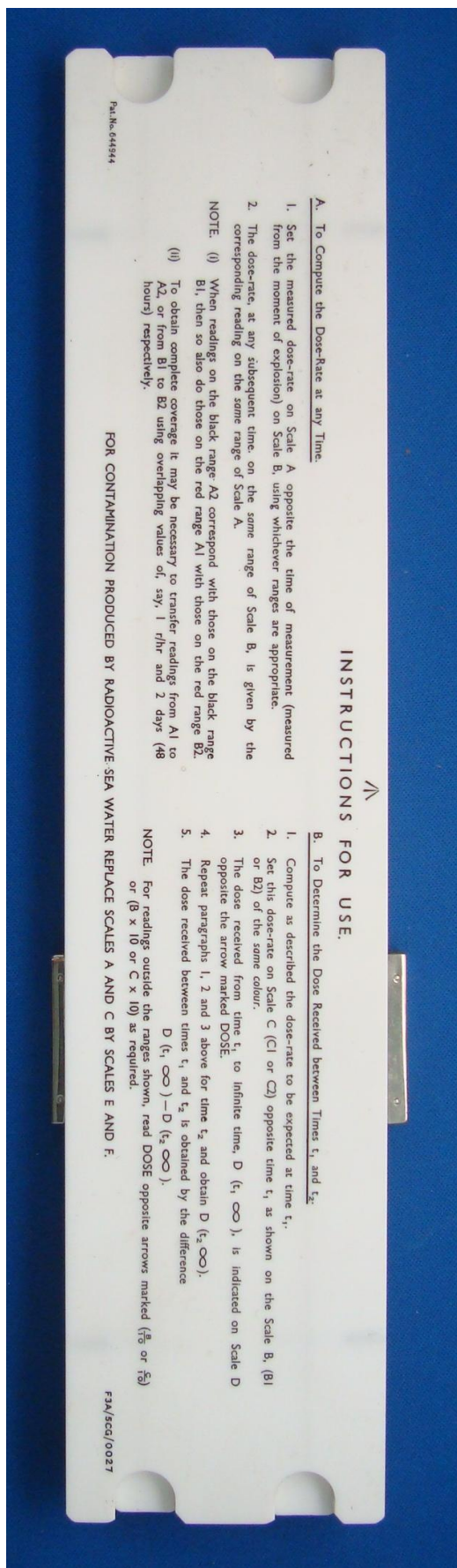


Figure 3: TCD-SCSS-U.20121208.044-fig03

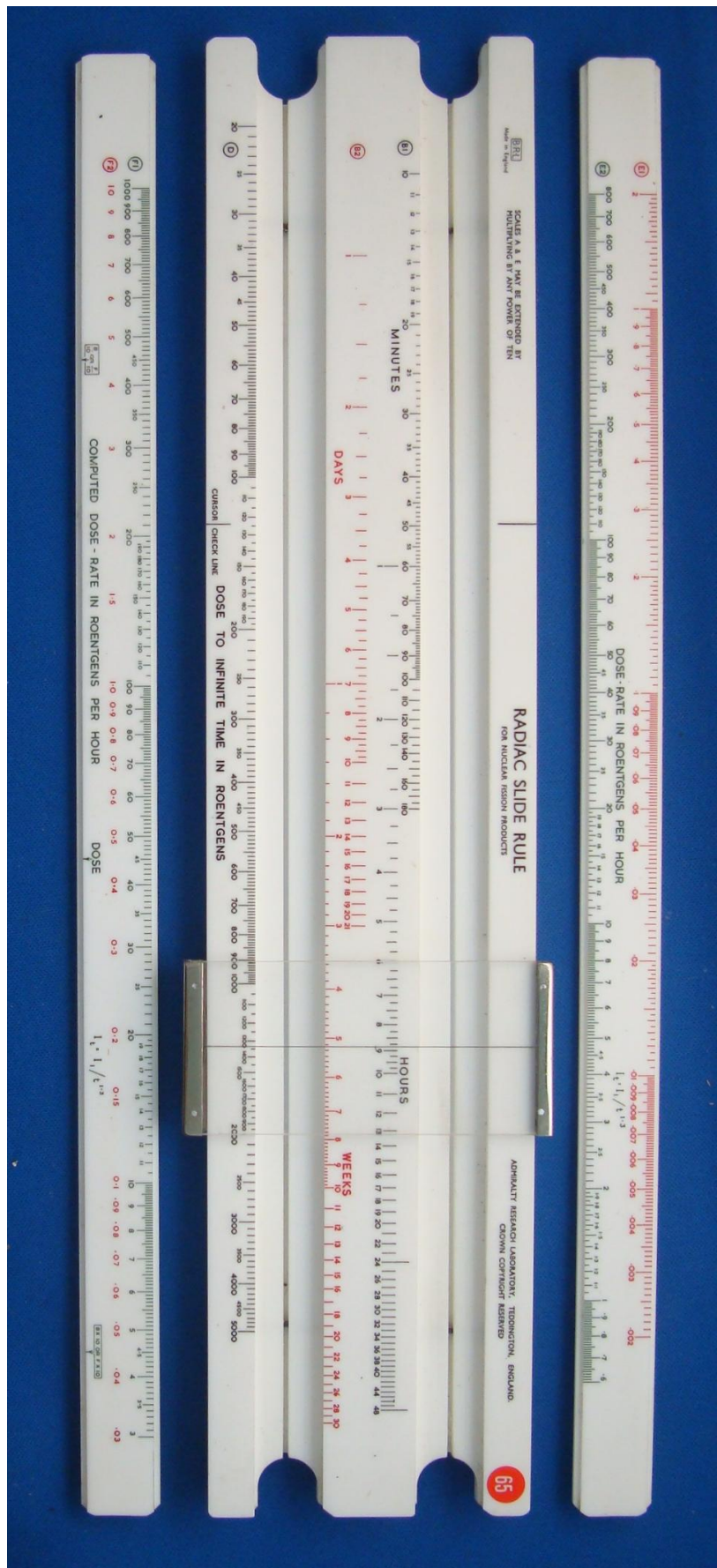


Figure 4: TCD-SCSS-U.20121208.044-fig04



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# **RADIAC SLIDE RULE** *for* **Nuclear Fission Products**

INSTRUCTION BOOKLET

Compiled by  
ADMIRALTY RESEARCH LABORATORY, TEDDINGTON  
FEBRUARY 1952

Figure 5: TCD-SCSS-U.20121208.044-fig05

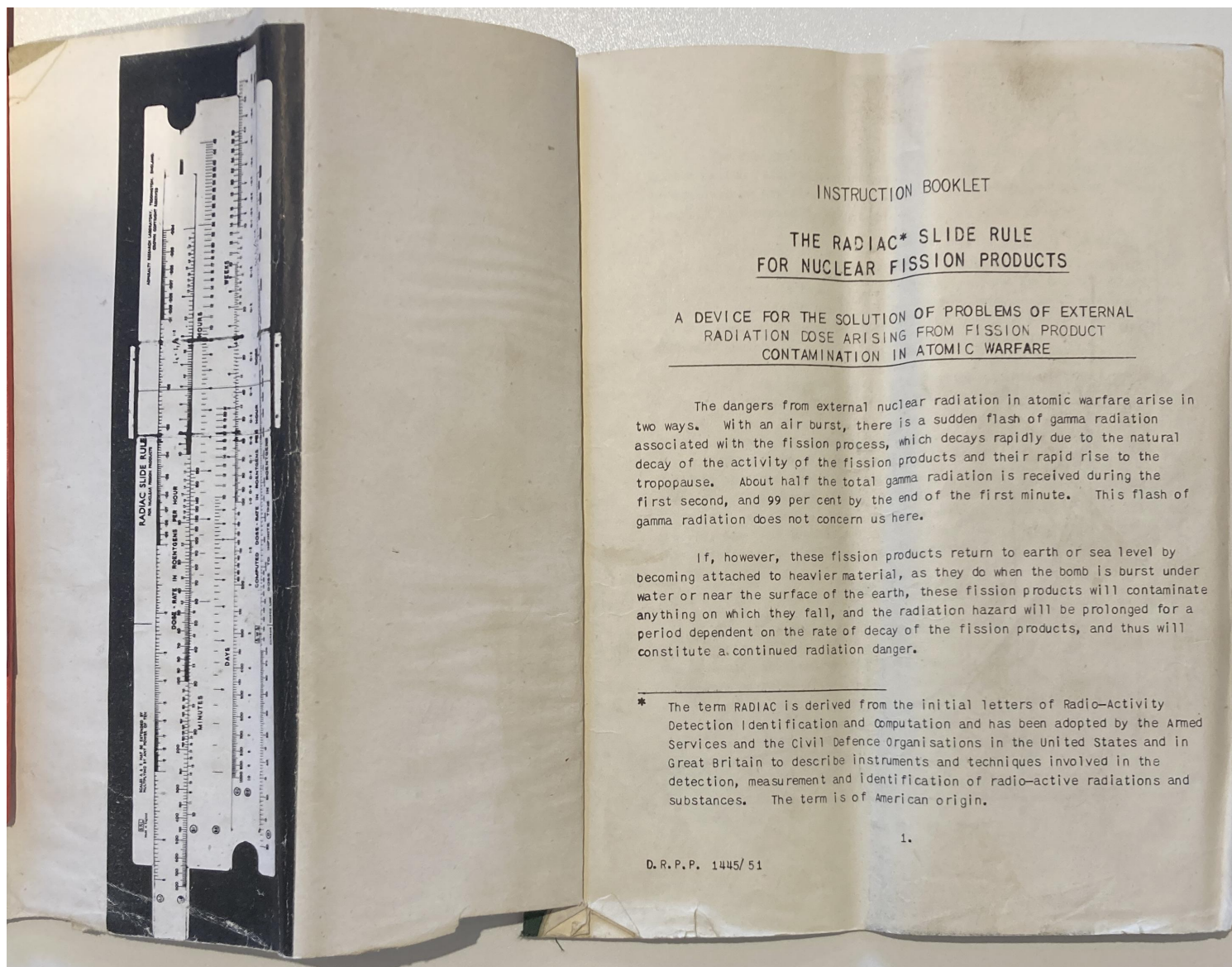


Figure 6: TCD-SCSS-U.20121208.044-fig06



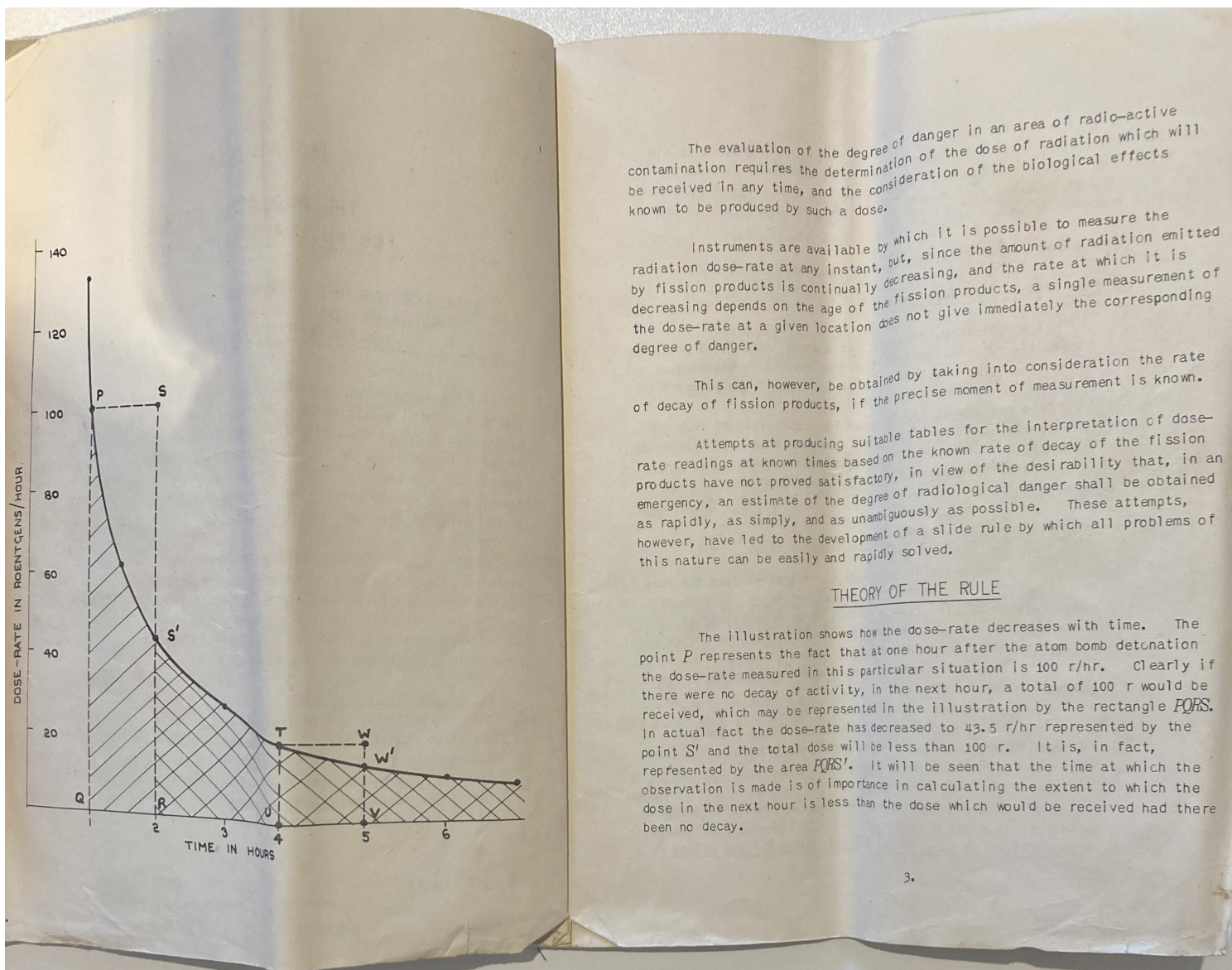


Figure 7: TCD-SCSS-U.20121208.044-fig07