

Draft Report of the Sub-Committee for Automatic Data Processing

1. In 1957, a "Sub-Committee for Mechanizing the Index of Hydrographic Data held by the Council" was constituted, with Prof. HELA as chairman. The first object of the Sub-Committee was to make arrangements so that all hydrographic data received by the Service Hydrographique was in punched card form, or could be easily transferred to punched cards. For that purpose, special card forms and corresponding observation forms were worked out and printed. A manual was printed to assure uniformity of procedure from all contributors. The transfer of hydrographic data to punched cards enabled the Service Hydrographique to replace the "Bulletin Hydrographique" with the "ICES Oceanographic Data Lists", produced directly from the punched cards. A "Chemistry Card" has also been agreed upon, so that all chemical data should in the future be contributed on cards or corresponding observation forms.
2. At the meeting in 1964, it was stated that the Sub-Committee's primary goals had been achieved. It was decided, however, that the Sub-Committee should continue with a changed name: "Sub-Committee for Automatic Data Processing" and new terms of reference: "To assist and advise the Hydrographical Committee and the Service Hydrographique on such problems as will arise as consequences of the mechanization of the Index and of the further development of automatic methods in data handling".
3. During the preceding year, a few changes have been made in the ICES punch card system. They are summed up in Appendix VI, which has been printed and distributed. A second edition of the ICES Punch Card Manual, incorporating all the Appendices (I - VI), is now in press, and will be distributed in the near future. Following the recommendation of the Meeting on the ICES Service Hydrographique in March 1966, a tentative FORTRAN program for the IBM 1620 has been written for the computation of σ_t , $\Delta \alpha$, and ΔD .

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Chairman

Appended: Appendix VI to the manual: "ICES Oceanographic
Punch Cards".

ICES OCEANOGRAPHIC PUNCH CARDS

Appendix VI to 1st (1962) edition.

- Page 2. 5-8. In the explanation delete the words "an anchor station".
18. To the explanation add
"0° Latitude is taken as N
0° Longitude " " " E
180° " " " " W".

- Page 3. 48-50. The section: "If the Mixed Layer - - - - - and a "depth" 999 punched" should be replaced by
"If the BT observation shows that the Mixed Layer extends to the bottom of the trace the depth of the trace should be punched together with an overpunch 11 in col. 50.
The columns should be left blank when no BT observation has been made".

- Page 7. 28-31. The text should be changed to read:
"Observation Depth, in metres. An overpunch 11 in col. 31 should be made when the depth has been obtained by application of an unprotected thermometer in this depth. That a depth is questionable is indicated by an overpunch 11 in col. 29."

- Page 8. 35-37. The section "If the Mixed Layer - - - - - and a "depth" 999 punched" should be replaced by
"If the BT observation shows that the Mixed Layer extends to the bottom of the trace the depth of the trace should be punched together with an overpunch 11 in col. 37.
The columns should be left blank when no BT observation has been made".

Appendix III.

Add the following

"Note concerning the Hydro Chemistry Card

Chlorosity (Cl_s) is defined as chlorinity (Cl) multiplied by the density at 20°C, so that

$$Cl_s = Cl + 10^{-3} \cdot Cl \cdot \sigma_{20} = Cl + R.$$

The term R is tabulated below, and the conversion to chlorosity may be carried out as follows:

- a) When chlorinity is given, simply find R from the table and add to the chlorinity.

b) When salinity (S) is given, use a desk computer to find Cl from the formula $Cl = 0.5535 S$, and proceed as under a).

Chlorosity Table

Cl	R	Cl	R	Cl	R	Cl	R
2.63	0.01	11.96	0.18	16.53	0.35	20.04	0.52
3.99	0.02	12.28	0.19	16.75	0.36	20.23	0.53
4.94	0.03	12.59	0.20	16.98	0.37	20.41	0.54
5.72	0.04	12.89	0.21	17.20	0.38	20.60	0.55
6.39	0.05	13.18	0.22	17.42	0.39	20.78	0.56
6.99	0.06	13.47	0.23	17.64	0.40	20.96	0.57
7.54	0.07	13.75	0.24	17.85	0.41	21.14	0.58
8.05	0.08	14.03	0.25	18.06	0.42	21.31	0.59
8.53	0.09	14.30	0.26	18.27	0.43	21.49	0.60
8.98	0.10	14.56	0.27	18.47	0.44	21.66	0.61
9.41	0.11	14.82	0.28	18.68	0.45	21.83	0.62
9.82	0.12	15.08	0.29	18.88	0.46	22.00	0.63
10.21	0.13	15.33	0.30	19.08	0.47	22.17	0.64
10.58	0.14	15.58	0.31	19.27	0.48	22.34	0.65
10.94	0.15	15.82	0.32	19.47	0.49	22.51	0.66
11.29	0.16	16.06	0.33	19.66	0.50	22.67	0.67
11.63	0.17	16.29	0.34	19.85	0.51	22.84	0.68
11.96		16.53		20.04		23.00	

Oxygen Content, in micromol/dm³. Most oxygen observations are given in ml/l, which is also the unit used in the Hydro Depth Card. In order to convert to micromol/dm³ multiply the value in ml/l by 44.66 and round off to the nearest whole number."