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Technical Report No. 52

PART 2 - FIGURES

SAKLANT ASW RESEARCH CENTRE

Study of the Oceanography of the Upper Layer in the N.E. Atlantic:

LOG OF DATA — PHASE A

by

A. Dahme

1 NOVEMBER 1965

NATO

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STUDY OF THE OCEANOGRAPHY OF THE UPPER LAYER IN THE N.E. ATLANTIC

MILOC 64 DATA — PHASE A

By

A. Dahme

1 November 1965

APPROVED FOR DISTRIBUTION

HENRIK NØDTVEIT
Director

SACLANT ASW RESEARCH CENTRE
Viale San Bartolomeo 92
La Spezia, Italy

TECHNICAL REPORT NO. 52

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Phase A, lap 1
Sea Surface Temperature

FIG. 2.1
Phase A, lap 1

Sea Surface Temperature

H.M.S. Dairymple

FIG. 2.2
Phase A, lap 1
Sea Surface Temperature

MILOC 64

FIG. 2.3
Phase A, lap 2
Sea Surface Temperature

FIG. 2.6
Phase A, lap 3

Sea Surface Temperature

Maria Paolina G.

FIG. 2.7
Phase A, lap 3

Sea Surface Temperature

MILCO 64

FIG. 2.9
Phase A, lap 5
Sea Surface Temperature

H.M.S. Dalrymple

FIG. 2.11

Date: October 1964
Location: 45°N - 53°E
Temperature Range: 12°C - 19°C
Phase A, lap 5

Sea Surface Temperature
Phase A, lap 1

Difference: Injection Temperature minus S.S.T.
(Injection Temperature extracted from Thermograph Trace)

H.M.S. Dalrymple
Phase A, lap 2

DIFFERENCE: INJECTION TEMPERATURE MINUS B.S.T.

(Injection Temperature extracted from Thermograph Trace)
Phase A, lap 3

DIFFERENCE: INJECTION TEMPERATURE MINUS S.S.T.
(Injection Temperature extracted from Thermograph Trace)

H.M.S. Dalmynpe

FIG. 2.15

7th September 1964

45°N.  46°  47°  48°  49°  50°  51°  52°  53°
Phase A, lap 2

DIFERENCE: INJECTION TEMPERATURE MINUS B.S.T.

7th September 1964

FIG. 2.10
Phase A, lap 3

DIFFERENCE: INJECTION TEMPERATURE MINUS S.S.T. (Injection Temperature extracted from Thermograph Trace)

FIG. 2.20
Miloc 64
phase A, lap 1
2nd September 1964

SEA SURFACE TEMPERATURE
(AIR and Bucket Comparisons)

- Measured by ship's bucket
- Measured by aircraft's air radiation thermometer when crossing ship's track

FIG. 2.21
SEA SURFACE TEMPERATURE
(AIR and Bucket Comparisons)

FIG. 2.22
SEA SURFACE TEMPERATURE
(ART and Bucket Comparisons)

FIG. 2.23
CLASSIFICATION OF BT TRACES

MILOC 64

1  2  3  4  5  6  7
FIG. 33
Phase A, lap 1
LAYER DEPTH AND SEA SURFACE TEMPERATURE
MEASURED SIMULTANEOUSLY ALONG SHIPS TRACKS

FIG. 3.14
Phase A, lap 3
LAYER DEPTH AND SEA SURFACE TEMPERATURE
MEASURED SIMULTANEOUSLY ALONG SHIPS TRACKS

FIG. 3.16
Pha-A, lap 5
LAYER DEPTH AND SURFACE TEMPERATURE
MEASURED SIMULTANEOUSLY ALONG SHIPS TRACKS

FIG. 3.17
Phase A, lap 1
COMPARISON BETWEEN LAYER DEPTH AND SEA SURFACE TEMPERATURE

FIG. 3.18
Phase A, lap 2
COMPARISON BETWEEN LAYER DEPTH AND SEA SURFACE TEMPERATURE

Maria Paolina G. 12:30 0 0 16 0 0 15 GMT

H.M.S. Dalrymple 12:30 0 0 16 0 0 17:30 GMT

João de Lisboa 7th September 1964 12:30 0 0 16 0 0 15 GMT

FIG. 3.19
MILOC 64

Phase A, lap 3

COMPARISON BETWEEN LAYER DEPTH AND SEA SURFACE TEMPERATURE

- H.U. Sverdrup
- H.M.S. Dalrymple
- Maria Paolina: 7th September 1964
Phase A, laps 4.5
COMPARISON BETWEEN LAYER DEPTH AND SEA SURFACE TEMPERATURE

FIG. 3.21
MILOC 64
Phase A lap 1 sheet 1
GEX Measurements
with average wind
over 4 hour periods

FIG. 4.1
MILOC 64
Phase A, top 1 sheet 2
G.E.K Measurements with average wind over 4 hour periods

FIG. 4.2
MILOC d4
Phase A, laps 2 & 3
G.E.K Measurements
with average wind
over 4 hour periods

FIG. 4.3
MILOC 64
Phase A, lap 5
G.E.K Measurements
with average wind
over 4 hour periods

FIG. 4.4
MILOC 64
Phase A, laps 4 & 5

G.E.K Measurements
with average wind
over 4 hour periods

FIG. 4.5
Phase A, Lap 1

Wind Speed and Direction

FIG. 5.1
Phase A, Lap 1

Wind Speed and Direction

FIG. 5.3

September 1964
Phase A, lap 2

Wind Speed and Direction

H.M.S. Daring

FIG. 5.5
Phase A, lap 2
Wind Speed and Direction

MILOC 64

36
32
30
28
24
20
16
12
8
4
0

0 20 60 120 160 200 240 280 300 320 360°

49° 50° 51° 52° 53° N

6th 7th 5th

September 1984

FIG. 5.6
MILOC 64

Phase A, lap 3

Wind Speed and Direction

H.M.S. Dalrymple

FIG. 5.7
Miloc 64

Phase A, lap 3

Wind Speed and Direction

FIG. 5.8
Phase A, lap 3

Wind Speed and Direction

FIG. 5.8
Phase A, lap 5

Wind Speed and Direction

MILOC 64

Maria Paulina G.

FIG. 5.10
Phase A, lap 1
Air Temperature

MILOC 64

20°C

9°C

16°C

17°C

18°C

19°C

20°C

Dry

Wet

FIG. 5.11
Phase A, lap 2
Air Temperature

MILOC 64

C°  
20
19
18
17
16
15
14

45°N 46° 47° 48° 49° 50° 51° 52° 53°

7th September 1964

12:30 8 0 16 8 0 16

5th

6th

Dry

Wet
MILOC 64

Phase A, lap 2

Air Temperature

H.M.S. Dalrymple

C

7th September 1964
12:30  8  0  16  8  0  18
45°N.  46°  47°  48°  49°  50°  51°  52°  53°

Dry
Wet

FIG. 5.15
MILOC 64

Phase A, lap 3

Air Temperature

Maria Paolina G.

FIG. 5 18
MILOC 64

Phase A, lap 4

Air Temperature

Joao de Lisboa

FIG. 5.20
Phase A, lap 5

Air Temperature

Dry

Wet

FIG. 5.22
Phase A, lap 1

Difference Air Temperature minus Sea Surface Temperature

FIG. 5.23
Phase A, lap 1

Difference Air Temperature minus Sea Surface Temperature

FIG. 5.24
Phase A, lap 1
Difference Air Temperature minus Sea Surface Temperature

FIG. 5.25
Phase A, lap 2

Difference Air Temperature minus Sea Surface Temperature

7th September 1964

FIG. 5.28
Phase A, lap 3

Difference Air Temperature minus Sea Surface Temperature

H.J. Sverdrup

September 1964

45° N. 46° 47° 48° 49° 50° 51° 52° 53°
NLOC 64

Phase A, lap 4

Difference Air Temperature minus Sea Surface Temperature

45°N.  46°  47°  48°  49°  50°  51°  52°  53°

8th   7th October 1964
Phase A, lap 5

Difference Air Temperature minus Sea Surface Temperature

H.M.S. Daedalus

October 1964 2nd 3rd
Phase A, lap 1

Evaporation

João de Lisboa

FIG. 5.35
MILOC 64

Phase A, lap 1

Evaporation

H.M.S. Dalrymple

NATO

RESTRICTED

0 4 8 12 16 20 0 4 8 12 16 20 0 4 8 12 16 20 0 4 8 12 16 20 0

2nd 3rd 4th 5th September 1964

46°N. 47° 48° 49° 50° 51° 52° 53°
Phase A, lap 2
Evaporation

MILOC 64

NATO RESTRICTED

FIG. 5.38

September 1964
Figure 5.39

MILOC 64

Phase A, lap 2

Evaporation

H.M.S. Dalrymple

September 1964

FIG. 5.39
Phase A, lap 1

Solar Radiation

The figures inside the diagrams give the daily insolation in cal/cm²/day.
Phase A, lap 2

Solar Radiation

The figures inside the diagrams give the daily insolation in cal/cm²/day.

September 1964

MILOC 64

H. M. S. Dalrymple

NATO RESTRICTED
Solar Radiation
The figures inside the diagrams give the
daily insolation in cal/cm²/day

September 1964
MILOC 64
Phase A, laps 1, 2, 3, 4

Comparison ASWEPs Input Data and MILOC Bucket Temperature
Aswep Period 3rd-12th Sept 1964
Miloc Period 2nd-8th Sept 1964
DISTRIBUTION OF TEMP DIFFERENCES

TOTAL OBSERVATIONS: 49
MILOC 64
Phase A, laps 1, 2, 3, 4

COMPARISON ASWEPS ANALYSIS OF INPUT DATA and MILOC BUCKET TEMPERATURE
Asweeps Period 3rd - 12th Sept 1964
Miloc Period 2nd - 8th Sept 1964

DISTRIBUTION OF TEMP. DIFFERENCES

TOTAL NUMBER OF POINTS: 162

![Graph showing distribution of temperature differences with 76%, 43%, and 28% categories.]
Phase A, laps 1, 2, 3

COMPARISON ASWEPS ANALYSIS with ACTUAL LAYER DEPTH

ASWEPS - Period 13th-22nd Sept 1964
MILOC Period 2nd-8th Sept 1964

LAP 1

LAP 2

LAP 3

--- Actual Layer Depth.

ASWEPS analysis of Layer Depth.
MILOC 64
Phase A, laps 1, 2, 3, 4

Comparison of ASWEP's Layer Depth Analysis with MILOC Layer Depths
ASWEP's Period 13th - 22nd Sept 1964
MILOC Period 2nd - 9th Sept 1964

Total Number of Points: 94

ASWEP's L.D. Shallower than MILOC
ASWEP's L.D. Deeper than MILOC

Figure 47