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Technical Report No. 130

MILOC 65:

A MULTI-SHIP OCEANOGRAPHIC SURVEY IN THE EASTERN NORTH ATLANTIC

SACLANT ASW
RESEARCH CENTRE

VOLUME 5

TRACK CHARTS AND SUMMARY OF PHASES - SOUTHERN REGION

by

A. DAHME

15 DECEMBER 1968

NATO

VIALE SAN BARTOLOMEO, 400
I-19026-LA SPEZIA, ITALY

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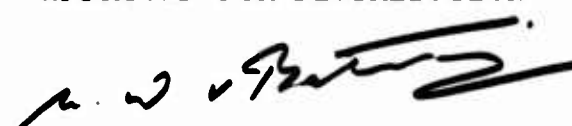
By

(10) A. Dahme

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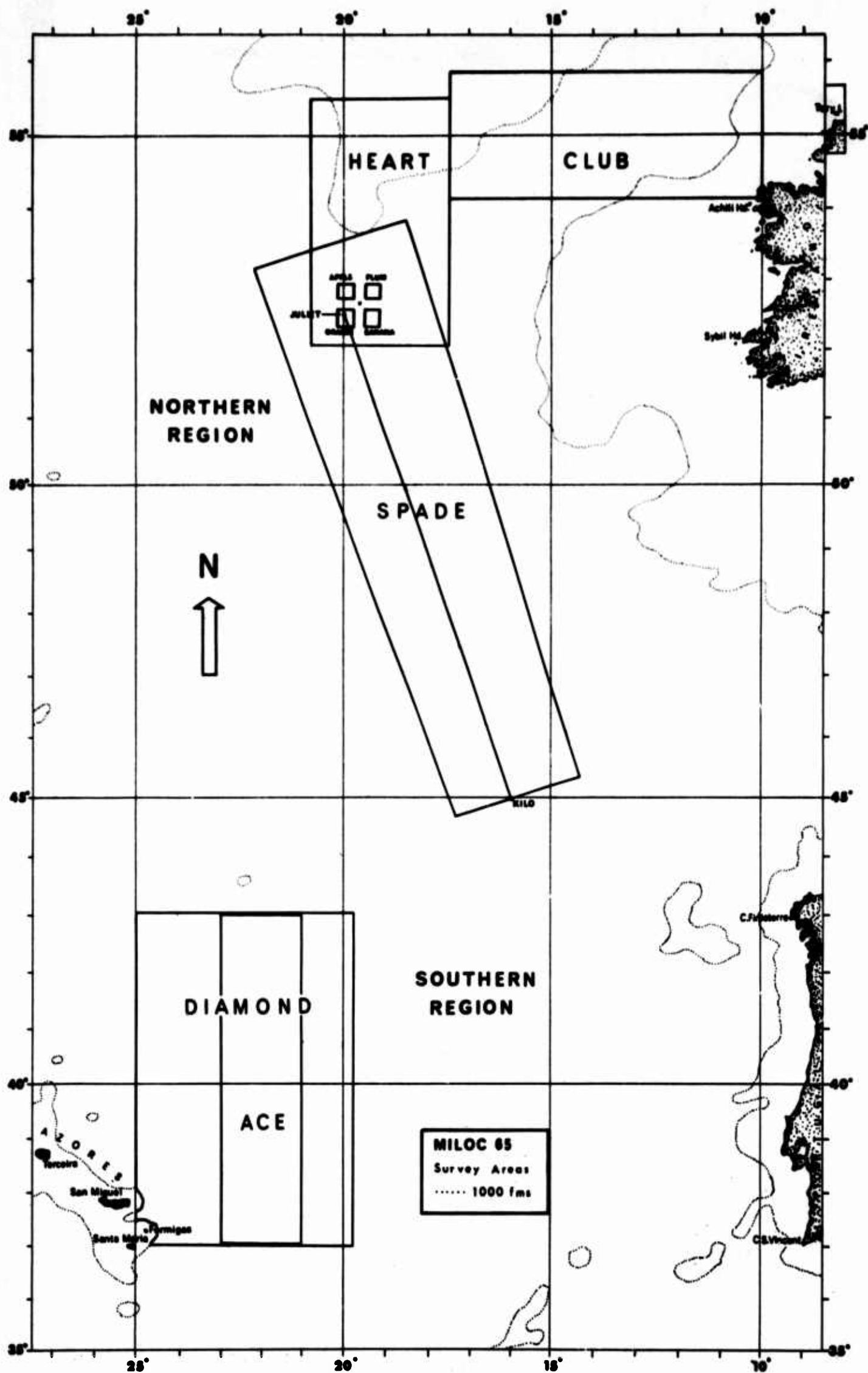
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LOCATION OF AREAS

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MILOC 65:

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Volume 5

TRACK CHARTS AND SUMMARY OF PHASES — SOUTHERN REGION

By

A. Dahme

ABSTRACT

l A NATO oceanographic survey was conducted in two regions of the eastern North Atlantic during the period 18 June - 2 August 1965. The data collected are presented in a series of volumes, of which this is one. The initial distribution of these volumes has been limited to organizations directly interested in the data analysis. ↗

INTRODUCTION

The general description of the MILOC 65 survey is contained in Ref. 1. The present volume comprises a summary of the phases covering areas ACE and DIAMOND, located NE of the Azores (see frontispiece), as well as the track charts for the ships participating in those phases. The master track charts are drawn to the scale of 1:750 000, ref. 40°N. This scale has been expanded to 1:500 000 for the small area surveyed during the Time Variation Studies.

In single-ship operations the tracks provided by the individual ships have been accepted and only obvious errors have been corrected. In operations where more than one ship was used the positions have been cross-checked with the mutual radar information and the original plots of the ships have been corrected where necessary.

1. SUMMARY OF PHASES: SOUTHERN REGION

The general programme as outlined in the Operation Plan is summarized in Ref. 1, paragraph 2.3. The following is a detailed description of the different phases of the survey as available from the ships' logbooks. It reviews the main purpose of each phase, and explains the information shown on the track charts. All times are given in GMT.

1.1 Phase G

The purpose of this phase was to study the water structure of area DIAMOND by means of conventional oceanographic cast data. The participating ships were OWEN and ORIGNY. They started the survey at 1300Z on 24 June, at station G 13, and then proceeded independently, OWEN taking casts down to a maximum depth of 500 m, and ORIGNY down to the bottom. BT dips were made between casts, by OWEN at intervals of approximately 10 n.mi, and by ORIGNY at intervals of approximately 20 n.mi. OWEN completed the survey by 1330Z on 1 July, and ORIGNY at about 2130Z on 9 July.

After completion of the area survey ORIGNY sailed to station B 10 (approximate position 38°30'N 24°15'W) to commence the Time Variation Study at 0030Z on 10 July. This was completed at 0145Z on 12 July, after two circuits.

The navigation of both ships was supported by LORAN A.

The track chart of the area survey is shown in Fig. 1. It includes the following information:

Positions and designations of the cast stations.

Consecutive cast numbers; the numbering is independent for each ship.

Position of BT dips with selected BT numbers.

Dates and selected times at which BT dips were made.

Lap 1 and Lap 2 of the Time Variation Study are shown in Fig. 2. The pattern to be followed by the ship, starting at the SW corner, was similar to that shown for squares APPLE and ORANGE in Fig. 4 of Ref. 1, but the sides of the square were 20 n.mi and the time scheduled to complete one circuit was 24 hours. Casts were taken at the corners and in the middle of the squares. The maximum depth of these casts was 500 m. BT dips were made every 5 n.mi.

In addition Fig. 2 indicates:

The location of the BT dips and oceanographic casts.

The consecutive numbers of the oceanographic casts.

Selected consecutive numbers of BT's.

The date and hour at which each circuit (lap) started; this starting time coincides with the first BT, taken at the SW corner of the square.

1.2 Phase H

This was a supplement to Phase G.

The Portuguese ship SALVADOR CORREIA surveyed two station lines of area DIAMOND and made a Time Variation Study around a square centred on Station E 7.

She started her survey at 1800Z on 24 June, at station A 11. While underway to station E 7 she stopped at stations B 10, C 9 and D 8 to take casts with a maximum depth of 500 m. BT dips were made approximately every 15 n.mi during this run.

After finishing station E 7 she commenced her Time Variation Study. The pattern to be followed was again similar to that of Fig. 4 of Ref. 1. The sides of the square were 15 n.mi and the time for completion of one circuit was 24 hours. Casts were taken at each corner and in the middle of the square with a maximum depth of 300 m. BT dips were scheduled with each cast and at distances of approximately 3.25 n.mi. However, owing to pressure of time these dips were made to a less rigid schedule.

After completing six circuits - designated Lap 2 to Lap 7 - SALVADOR CORREIA continued the area survey (Lap 8) on a line parallel to the previous one, taking measurements similar to those made during Lap 1. She finished her survey at 0100Z on 4 July, after completing station B 12.

Figure 3 gives the track chart for Lap 1 and Lap 8 with the same additional information as contained in Fig. 1.

Figures 4 to 6 show Lap 2 to Lap 7 of the Time Variation Study. They contain the same information as shown in Fig. 2.

The navigation of the ship was supported by LORAN A.

1.3 Phase I

This phase was designed to study the temperature structure of area ACE, with three ships steaming on parallel courses and making BT dips every half-hour. The participating ships, from East to West, were CORTE REAL, JOÃO DE LISBOA, DIOGO CÃO.

In addition to taking BT data, JOÃO DE LISBOA streamed a GEK and followed the procedure laid down in paragraph 4.3 of Ref. 1. Although the two other ships did not have GEK equipment they followed the same procedure for the sake of uniformity.

The survey started at 1200Z on 25 June, with Lap 1. The ships' tracks were laid out in such a way that the outside tracks were repeated and Lap 4 coincided with Lap 1.

JOÃO DE LISBOA and CORTE REAL finished the survey at 1700Z on 3 July. DIOGO CÃO continued the measurements until 0830Z on 4 July, along the track previously surveyed by JOÃO DE LISBOA.

Figures 7-9 give the track charts for the different laps. Navigation was supported by LORAN A. In addition the three ships were in continuous radar contact while steaming on parallel courses, taking distances and bearings every 15 minutes.

The track charts contain:

The dates.

BT locations and selected BT numbers.

There was a break from 1600Z to 2300Z on 28 June, while all three ships were taking part in a rescue action.

24°

22°

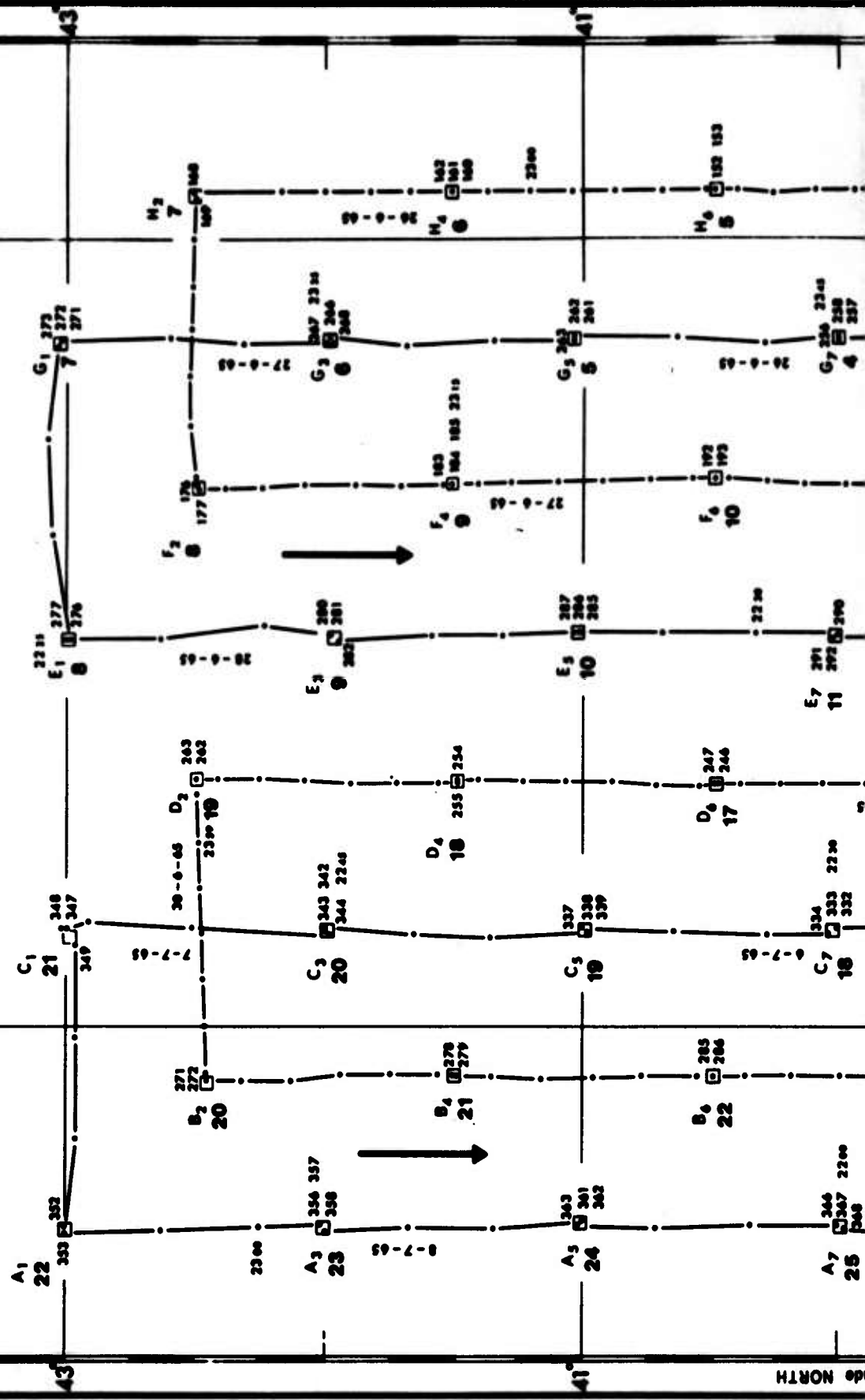
20°

MILOC 65 Phase G

TRACK CHART

REFERENCE

- BT (with selected consecutive numbers)
- Cast
- G₁₃ Cast station designation
- 1 Consecutive cast numbers
- 2300 time, GMT



de NORTH

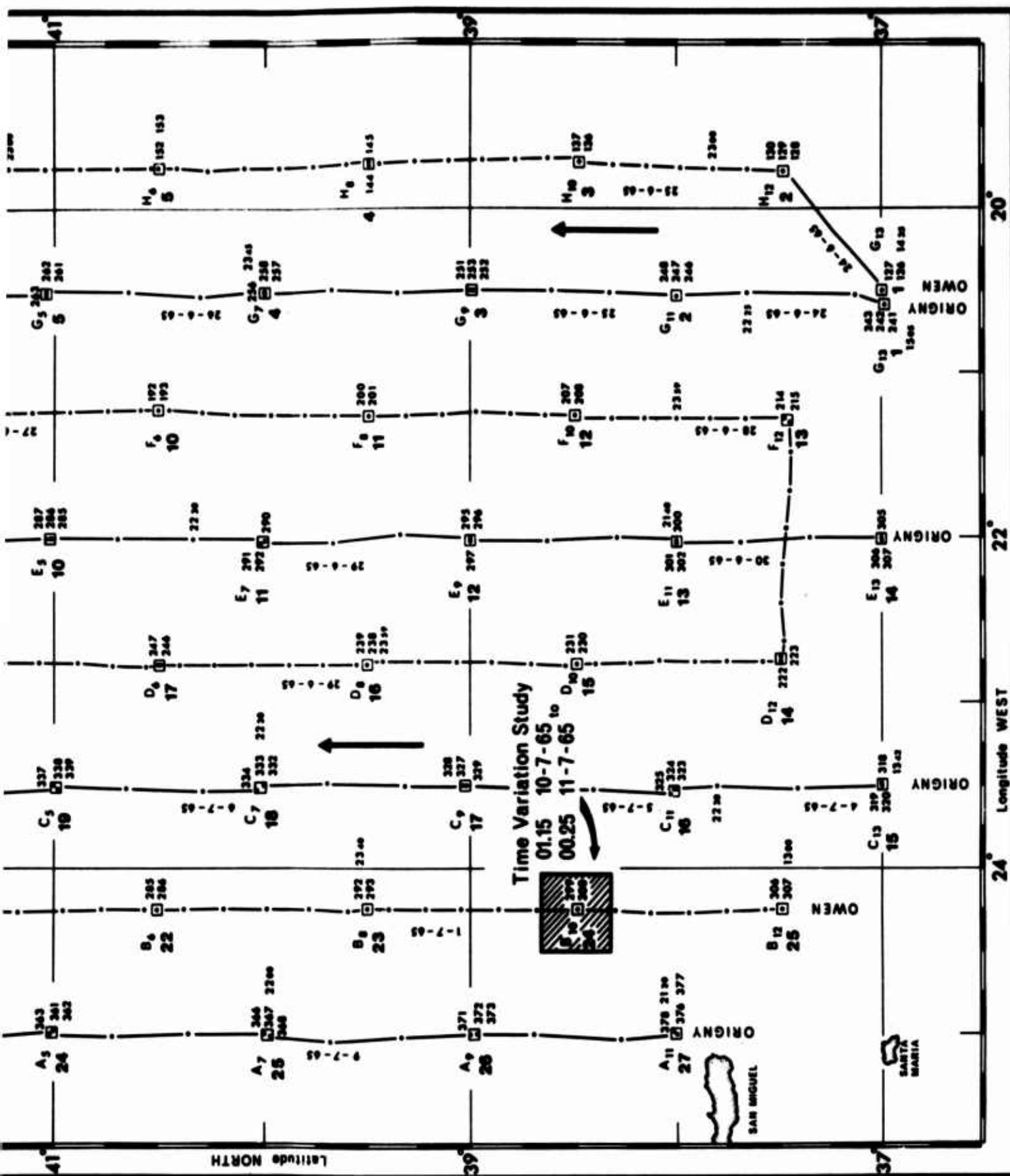


FIG. 1 PHASE G - TRACK CHART, AREA STUDY

MILOC 65 Phase G ORIGNY

LAP 1

LAP 2

TRACK CHARTS

START TIME 0115 10-7-65

START TIME 0025 11-7-65

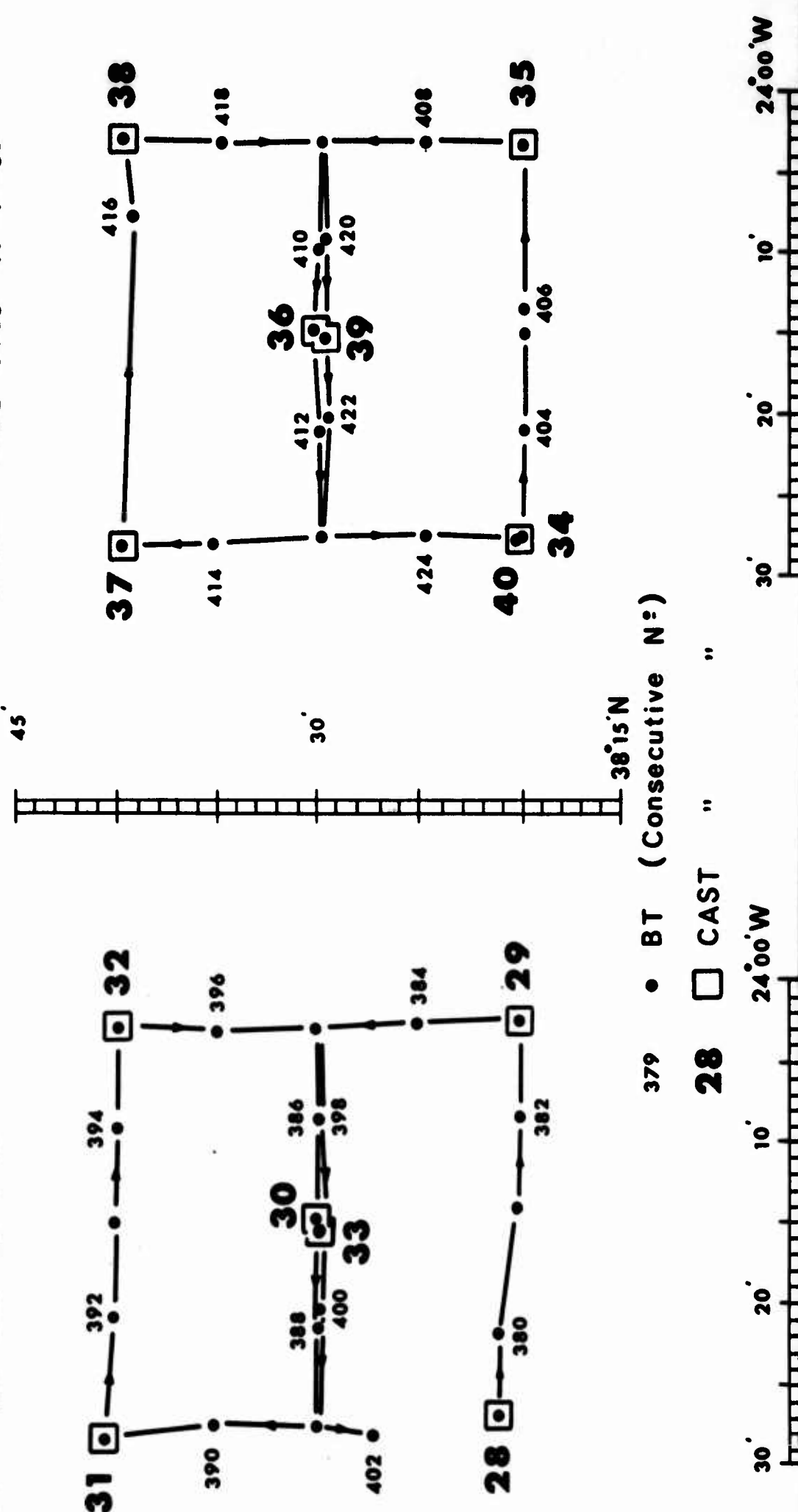


FIG. 2 PHASE G - TRACK CHART, TIME VARIATION STUDY

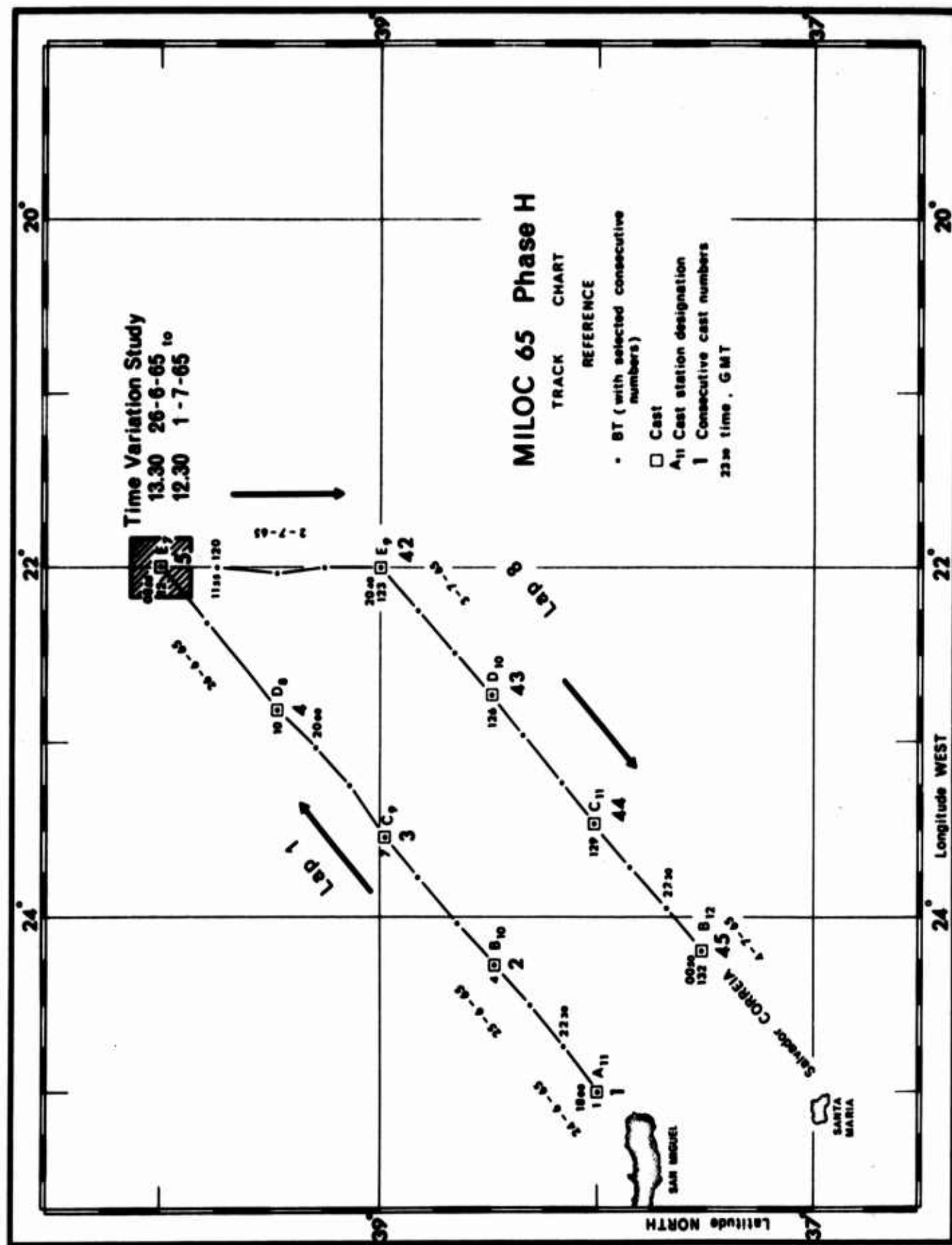


FIG. 3 PHASE H - TRACK CHART, LAPS 1 AND 8

LAP 2

MILOC 65 Phase H Salvador CORREIA

LAP 3

START TIME 1320 26-6-65

START TIME 1305 27-6-65

TRACK CHARTS

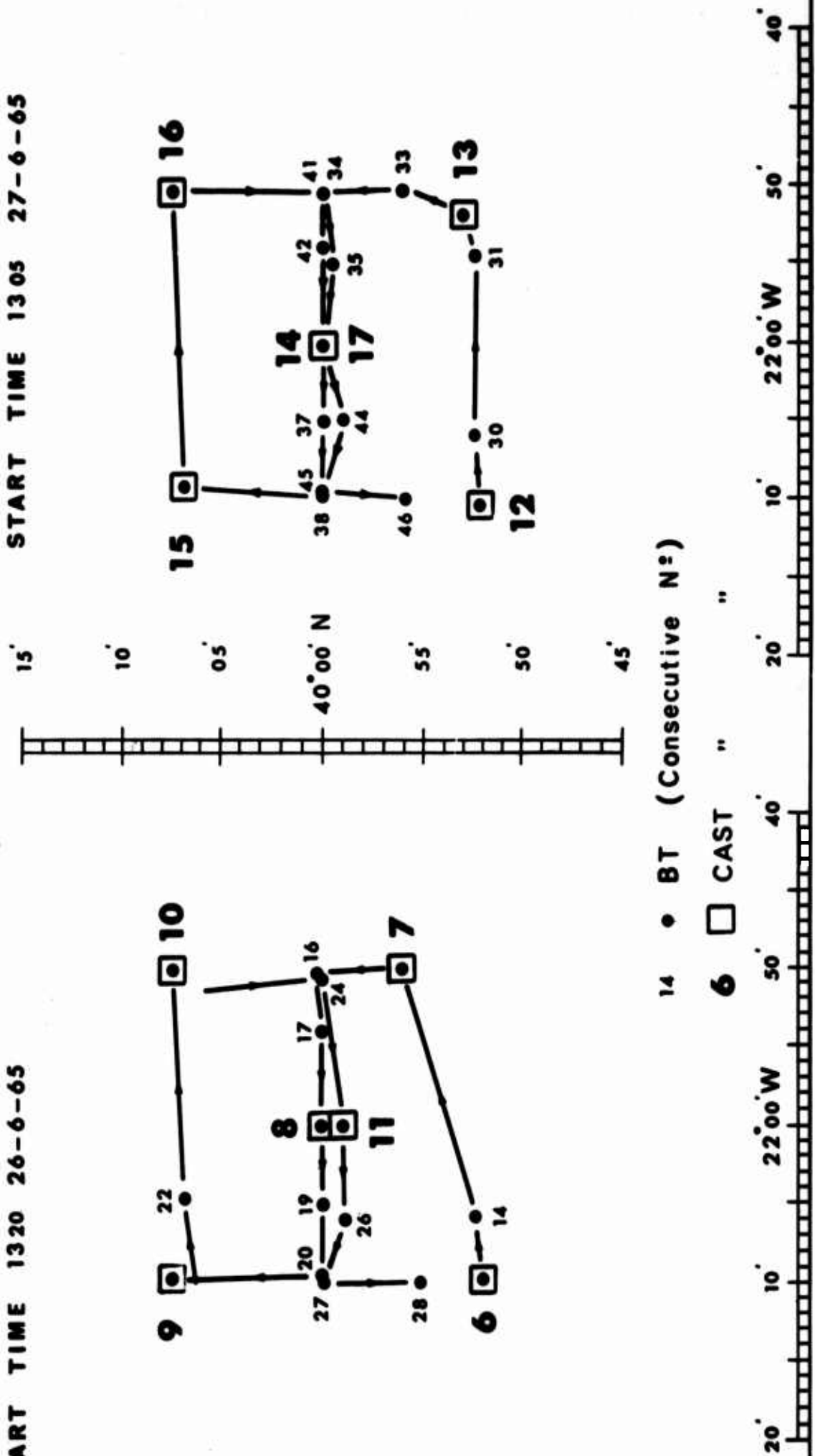


FIG. 4 PHASE H - TRACK CHART, LAPS 2 AND 3

MILOC 65 Phase H Salvador CORREIA

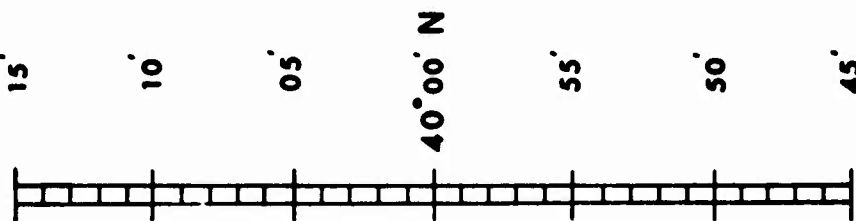
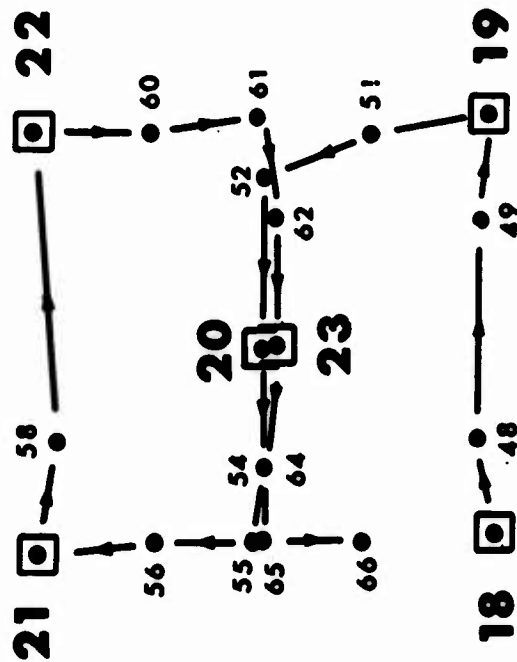
LAP 4

LAP 5

TRACK CHARTS

START TIME 1325 28-6-65

START TIME 1230 29-6-65



48 • BT (Consecutive N:)

18 □ CAST " "

FIG. 5 PHASE H - TRACK CHART, LAPS 4 AND 5

LAP 6

MILOC 65

Phase H

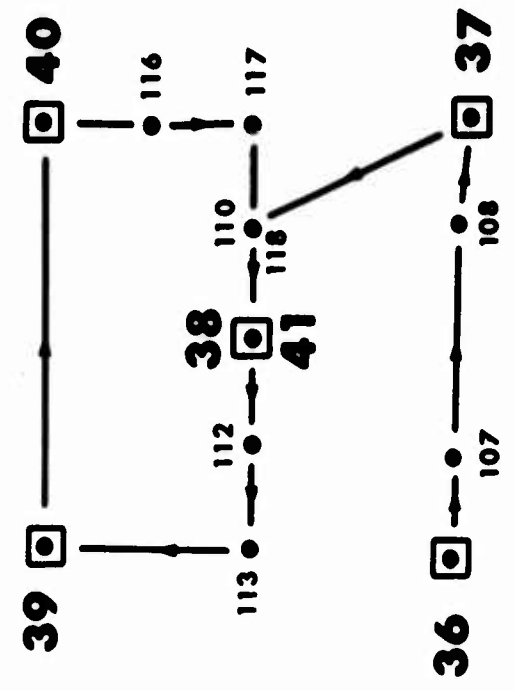
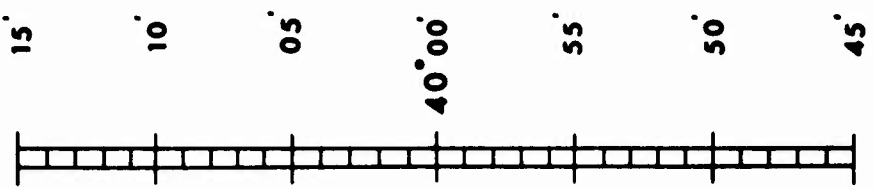
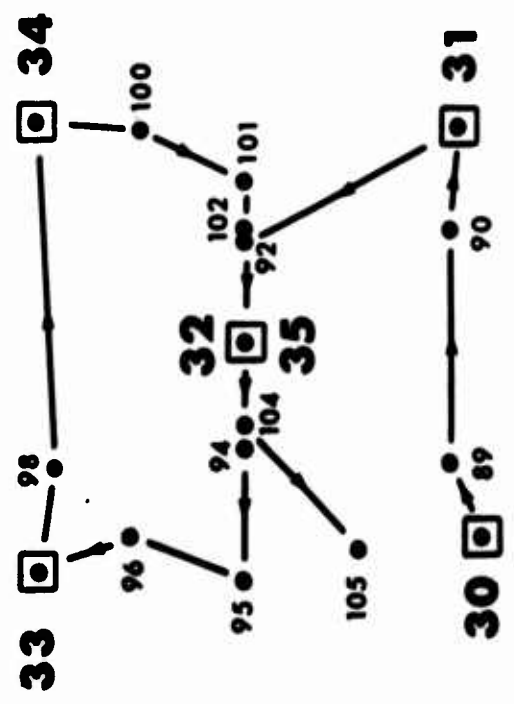
Salvador CORREIA

LAP 7

TRACK CHARTS

START TIME 1240 30-6-65

START TIME 1230 1-7-65

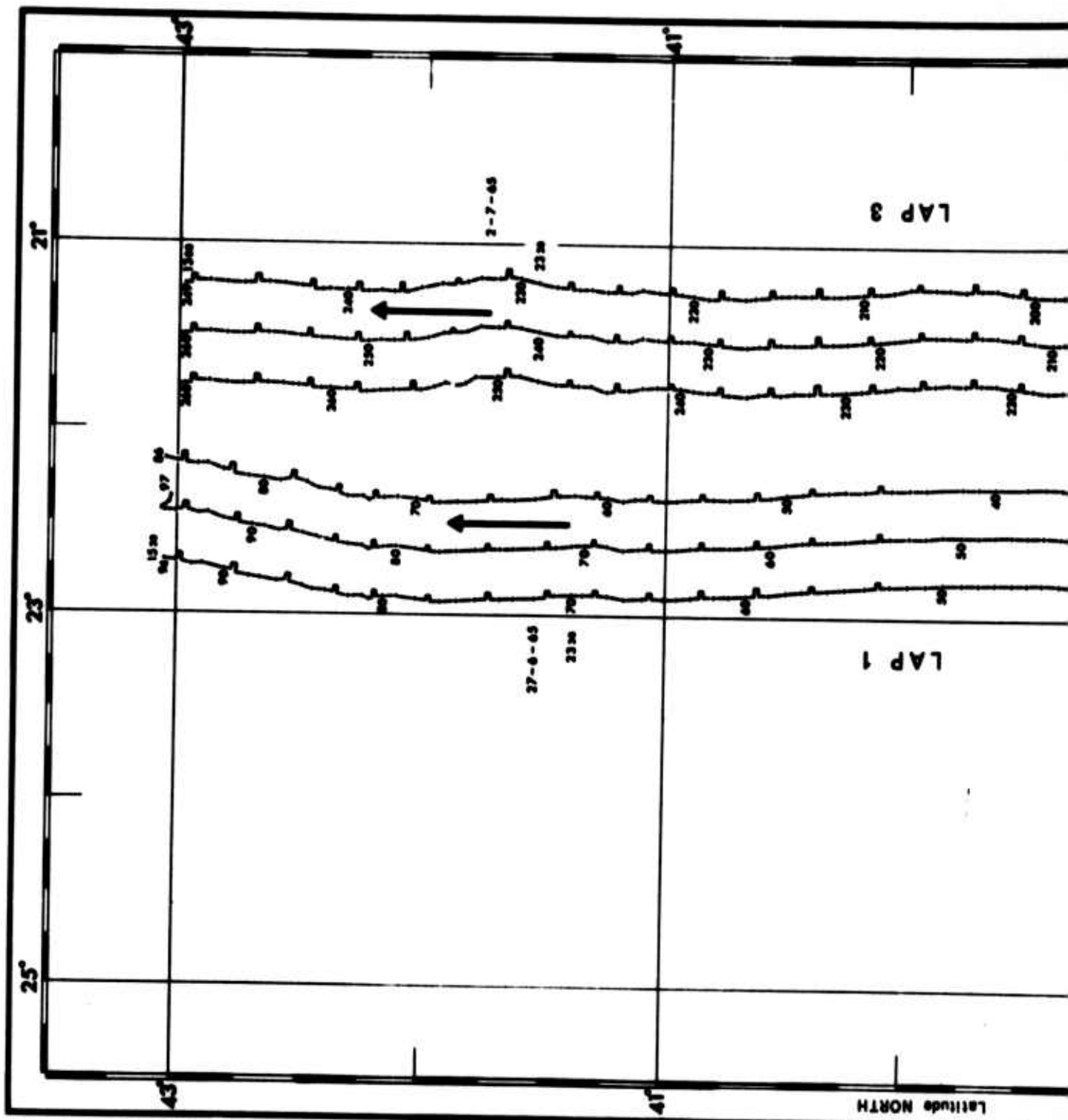


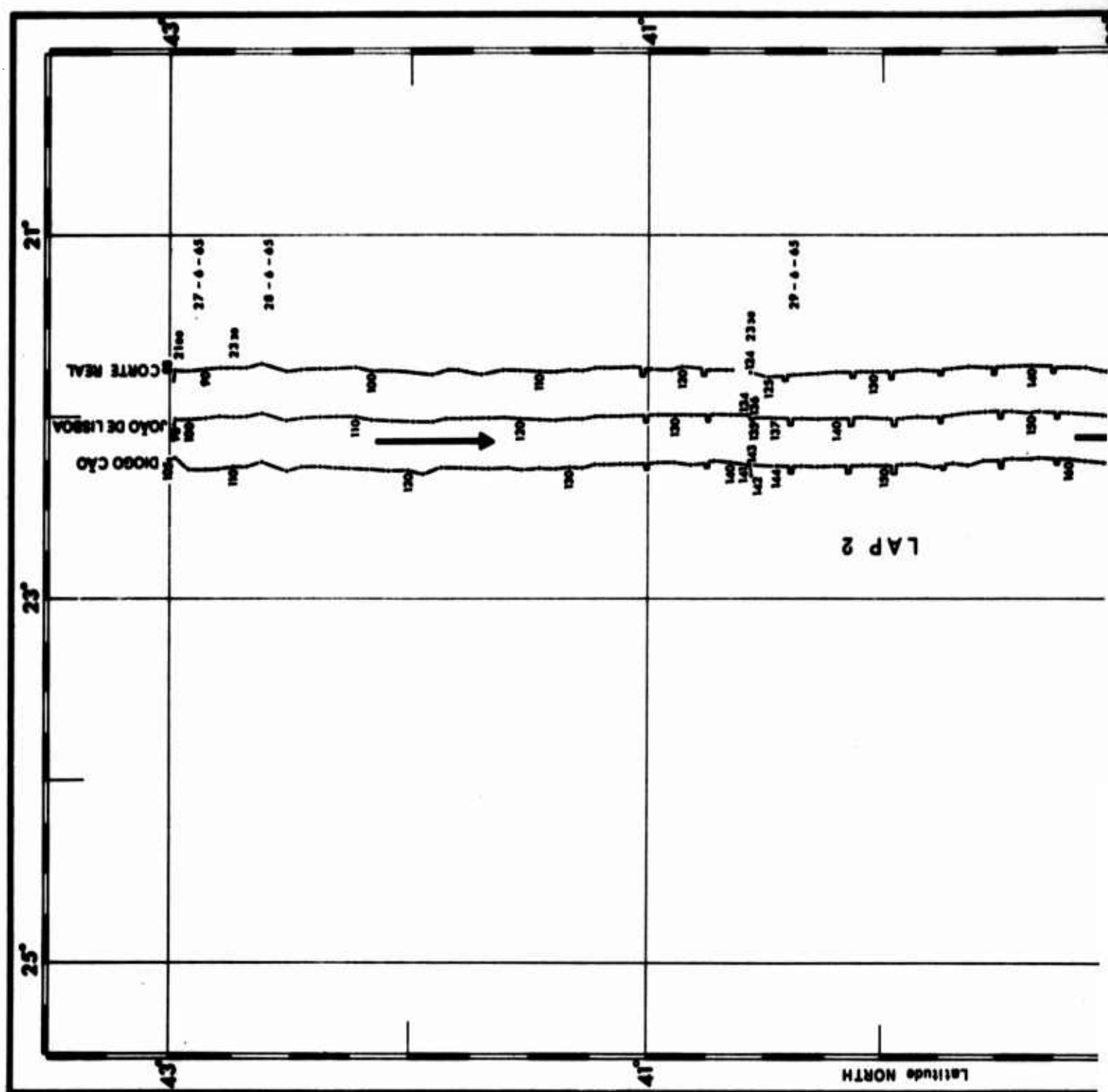
89 • BT (Consecutive N:)

30 □ CAST " "



FIG. 6 PHASE H - TRACK CHART, LAPS 6 AND 7





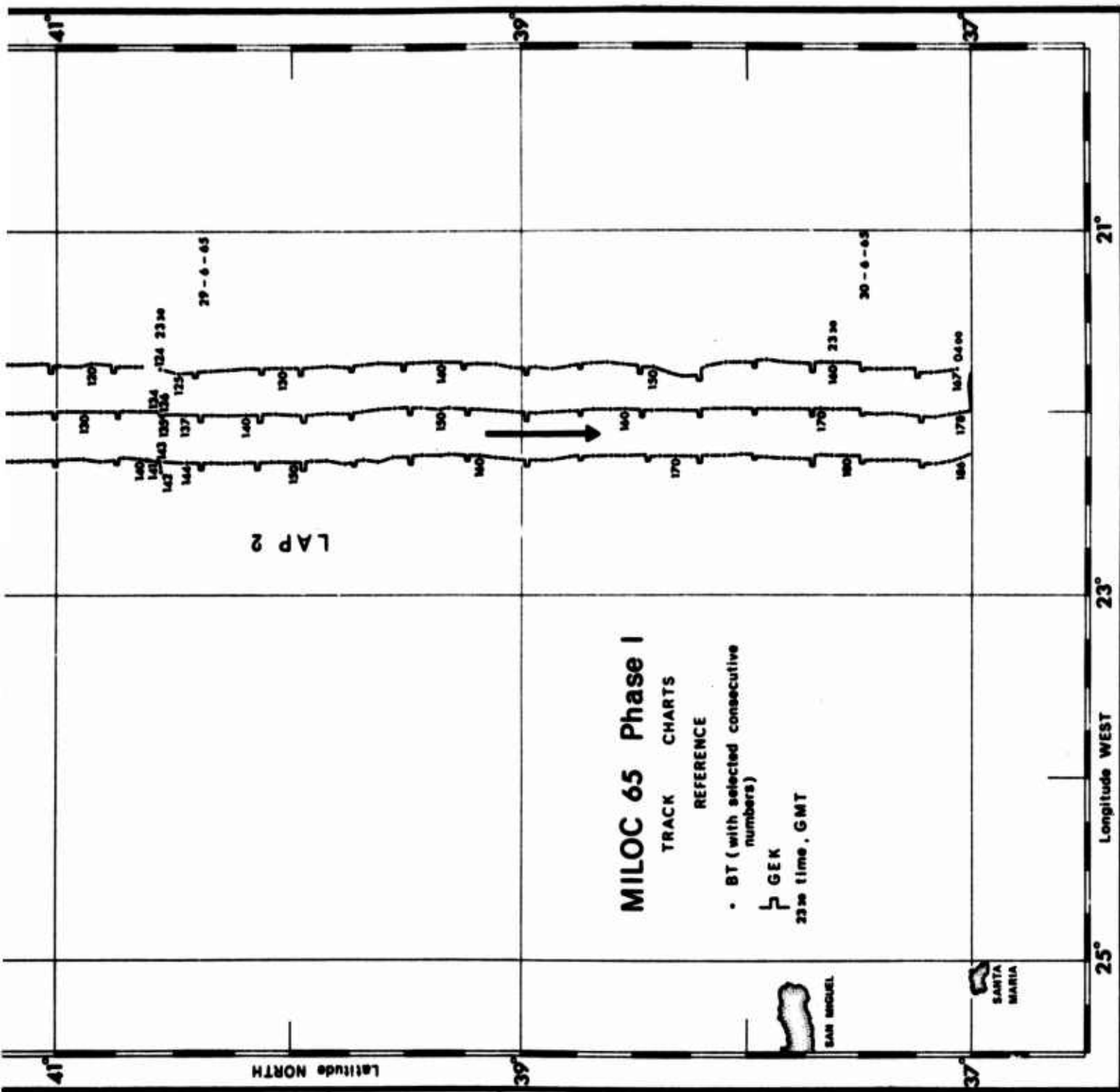
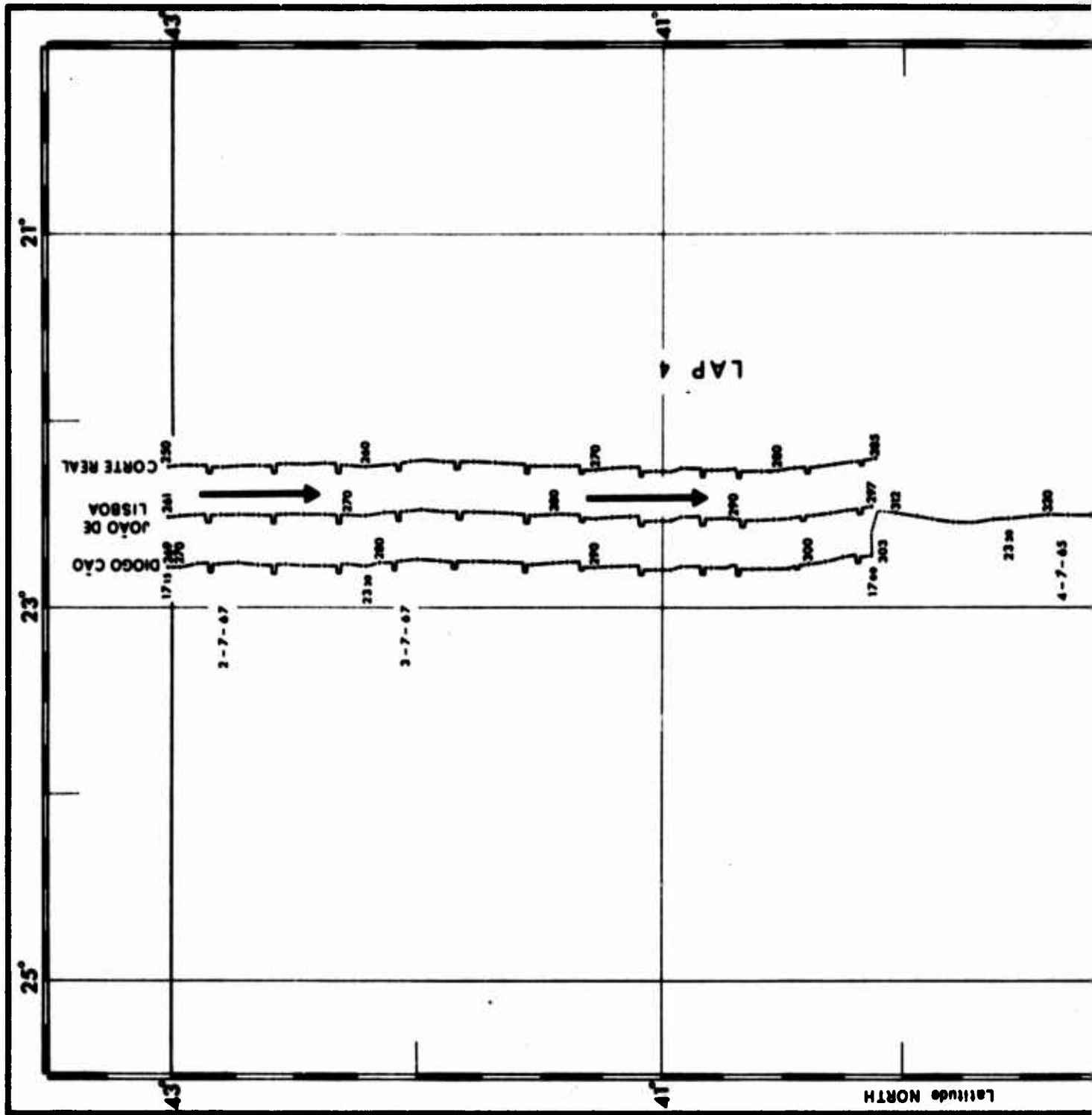


FIG. 8 PHASE I - TRACK CHART, LAP 2



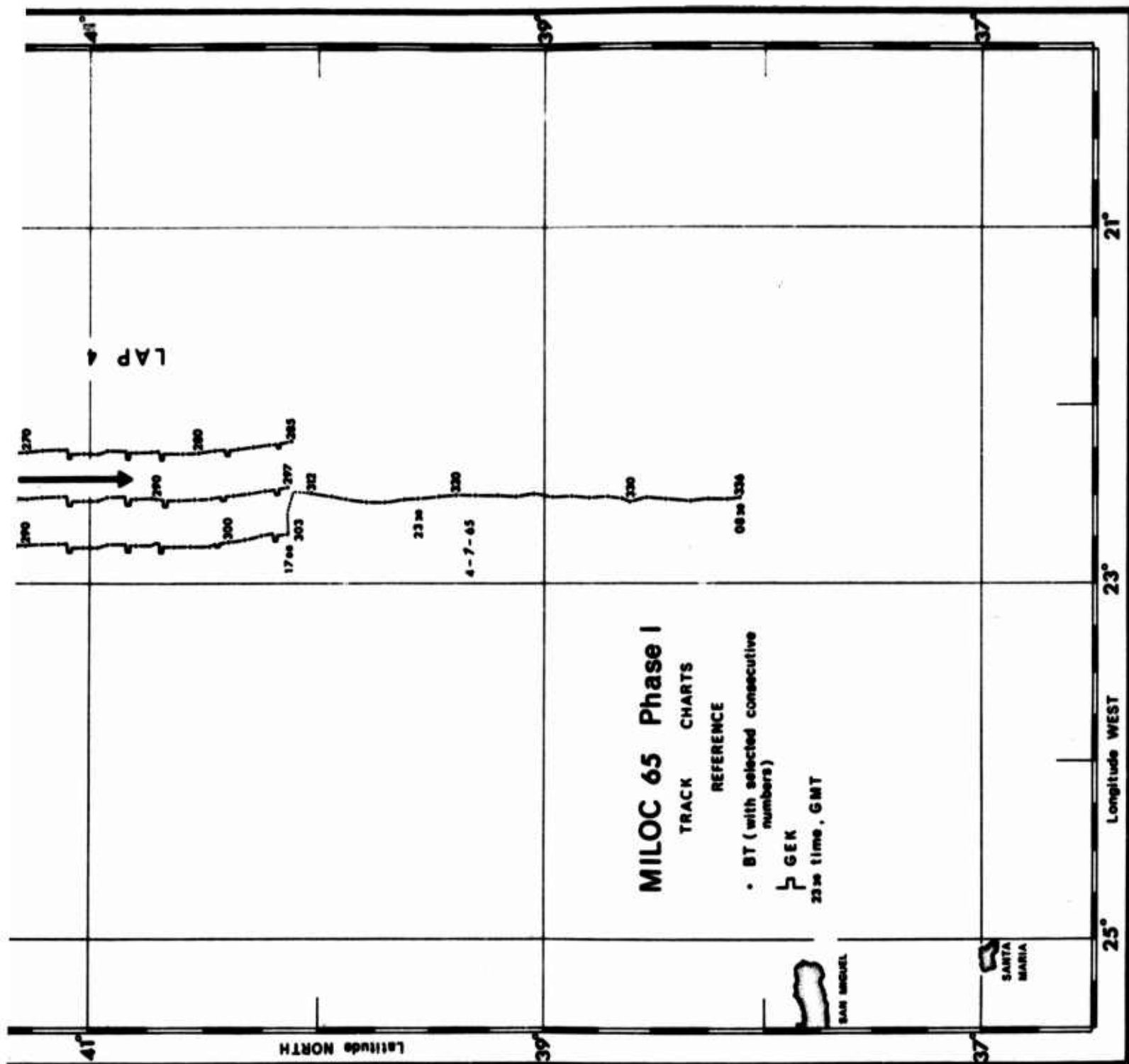


FIG. 9 PHASE I - TRACK CHART, LAP 4

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1. A. Dahme, "MILOC 65: A Multi-Ship Oceanographic Survey in the Eastern North Atlantic, Vol. 1: Description and Location of the Measurements", SACLANTCEN Technical Report No. 109, NATO UNCLASSIFIED.