

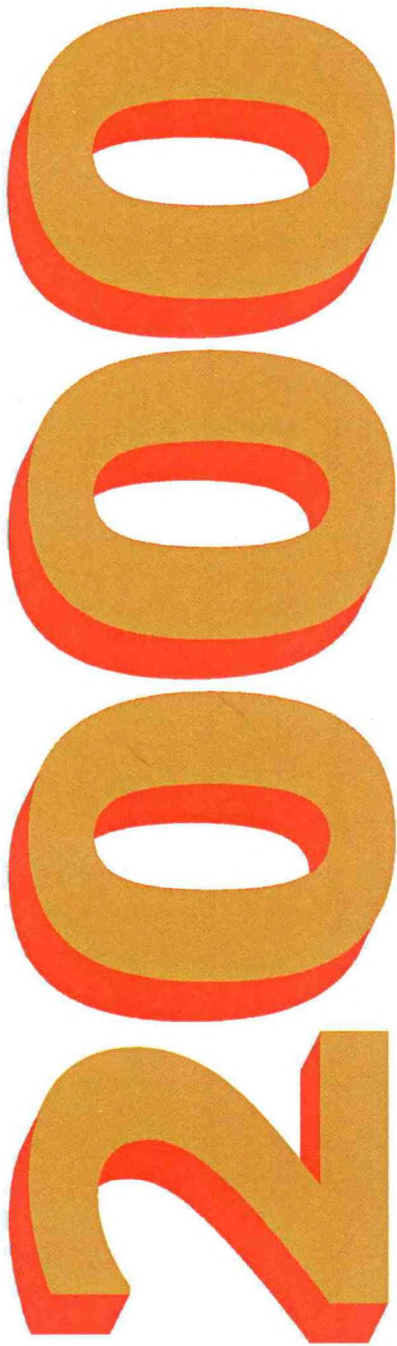


GLOBAL OCEAN OBSERVING SYSTEM (GOOS) CENTER

2000 ANNUAL REPORT

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The
Global
Ocean
Observing
System
(GOOS)
Center

Annual Report
January through December 2000

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Executive Summary

*Steven K. Cook
GOOS Center Manager
NOAA/AOML*

During calendar year 2000 the GOOS Center Global Drifter Program deployed 445 Drifting Buoys, with 236 deployed in the tropical Pacific, 77 in the tropical Atlantic plus 9 WOTAN's for the Hurricane array, 51 in the Indian Ocean and 72 in the southern Ocean. The Upper Ocean Thermal Center SEAS Program globally collected over 100,000 meteorological and 11,000 Expendable Bathythermograph (XBT) observations. Our data tracking activities monitored, in real-time, more than 365,000 wind, air temperature, sea level pressure and sea surface temperature measurements as well as more than 24,000 XBT measurements collected from ships observations and inserted onto the Global Telecommunications System. Additionally we monitored more than 730,000 real-time sea surface temperatures collected by the Global Drifter Center network plus more than 65,000 wind measurements collected by the Tropical Atmosphere-Ocean (TAO) array. These monitoring efforts identified and initiated corrective action for, several data drop-outs from several different sources.

The Data Assembly Center of the Global Drifter Program continued to successfully update the research quality database at two-month intervals even with declining personnel resources. The Atlantic XBT Data Assembly Center continued to import real-time data into the database at monthly intervals. We were able to continue XBT support and the upgrading of Drifting Buoys with barometer capability for our international colleagues with the financial help of NOAA's Office of Global Programs. We continued to participate in the DBCP, SOOPIP, VOSCLIM and the Working Group on Automated Systems. The development of AMVER/SEAS 2000 continued under ESDIM support.

GOOS Center Mission

To provide high quality ocean data and products in a timely and cost-effective manner to satisfy NOAA now-cast, forecast, detection, attribution and research mission requirements.

Major GOOS Center Operations

Voluntary Observing Ship (VOS) Program

The Global Ocean Observing System (GOOS) Center at NOAA's Atlantic Oceanographic and Meteorological Laboratory presently operates a global fleet of about 400 domestic and foreign commercial vessels. The GOOS global fleet mostly represents a subset of the larger National Weather Service Voluntary Observing Ship (VOS) fleet consisting of over 1500 vessels. These vessels voluntarily collect sea surface meteorological, sub-surface expendable bathythermograph, and shipboard thermosalinograph observations. They deploy Drifting Buoys and highly instrumented P-ALACE type floats and sometimes tow Continuous Plankton Recorders. The GOOS global VOS fleet is the mechanism used to collect observations and deploy instrumentation that transmit, in real-time, data to National Centers such as the National Center for Environmental Prediction. In any given year this network provides the following approximate number of observations:

630,000 Sea Surface Temperature Observations from Drifting Buoys
110,000 Meteorological Observations from VOS
30,000 Thermosalinograph Observations from VOS
15,000 Expendable Bathythermograph Observations from VOS

Global Drifter Program (GDP)

The GOOS Center presently operates a global Drifting Buoy Center that annually deploys, via the (VOS) Program, research vessels and U.S. Navy aircraft, over 400 Drifters in all three ocean basins. These drifters are tracked daily via the ARGOS satellite system. Their positions and sea surface temperatures (and sometimes other parameters) are processed and inserted on to the Global Telecommunications System (GTS) for global distribution. Approximately 630,000 sea surface temperatures are collected annually via this program. Additionally, the GOOS Center performs the added function of a Data Acquisition Center (DAC) for the GDP. When the deployed Drifters are verified as operational

they are reported to the DAC. This effort insures that research quality Drifter data are available from other organizations and countries programs. The Global Drifter Program is a participating member of the Intergovernmental Oceanographic Commission (IOC) - World Meteorological Organization (WMO), Data Buoy Co-operation Panel (DBCP) and as such represents NOAA in this international forum.

Expendable Bathythermograph (XBT) Program

The GOOS Center operates a global XBT Program that utilizes approximately 70 VOS to monitor, on a monthly basis, 26 transects in all three ocean basins. The GOOS Center utilizes Shipboard Environmental data Acquisition Systems (SEAS) hardware/software to collect, quality control and transmit in real-time subsurface oceanographic observations (about 15,000 per year) and sea surface meteorological observations (about 110,000 per year). The XBT is an expendable temperature probe that is manually launched from the bridge wings of commercial vessels approximately 4 times per day, along certain scientifically selected shipping lanes. The data transmitted via the wire link from the XBT probe is stored on the SEAS computer where it is processed and formatted for satellite message transmission. The transmitted data is routed to the GOOS Center where it is further quality controlled and then inserted on to the Global Telecommunication System (GTS) for global distribution. The National Center for Environmental Prediction (NCEP) uses these data for weather and climate forecasting as well as for seasonal, inter-annual and decadal climate research. The XBT program is a participating member of the IOC - WMO, Ship of Opportunity Program Implementation Panel (SOOPIP) and as such represents NOAA in this international forum.

Argo Program

AOML has been funded by the National Oceanographic Partnership Program (NOPP) as part of a larger group to develop the infrastructure for the Argo experiment. Specifically, AOML is to develop the information management methodology for the profiling float experiment. This methodology will take the data from the sensor through a real-time quality control to submission onto the GTS for dissemination to the user community. In addition, delayed mode quality control, data accessibility and network evaluation issues will be addressed and procedures developed and implemented. The principle NOAA user for the float data is the climate forecast group of NCEP. AOML is working with NCEP to develop and implement real-time quality control procedures for the profile data. To satisfy a diverse group of users, data must be provided within 12 hours of collection, 24 hours a day, 7 days a week. Automatic quality control procedures are being developed to meet these requirements.

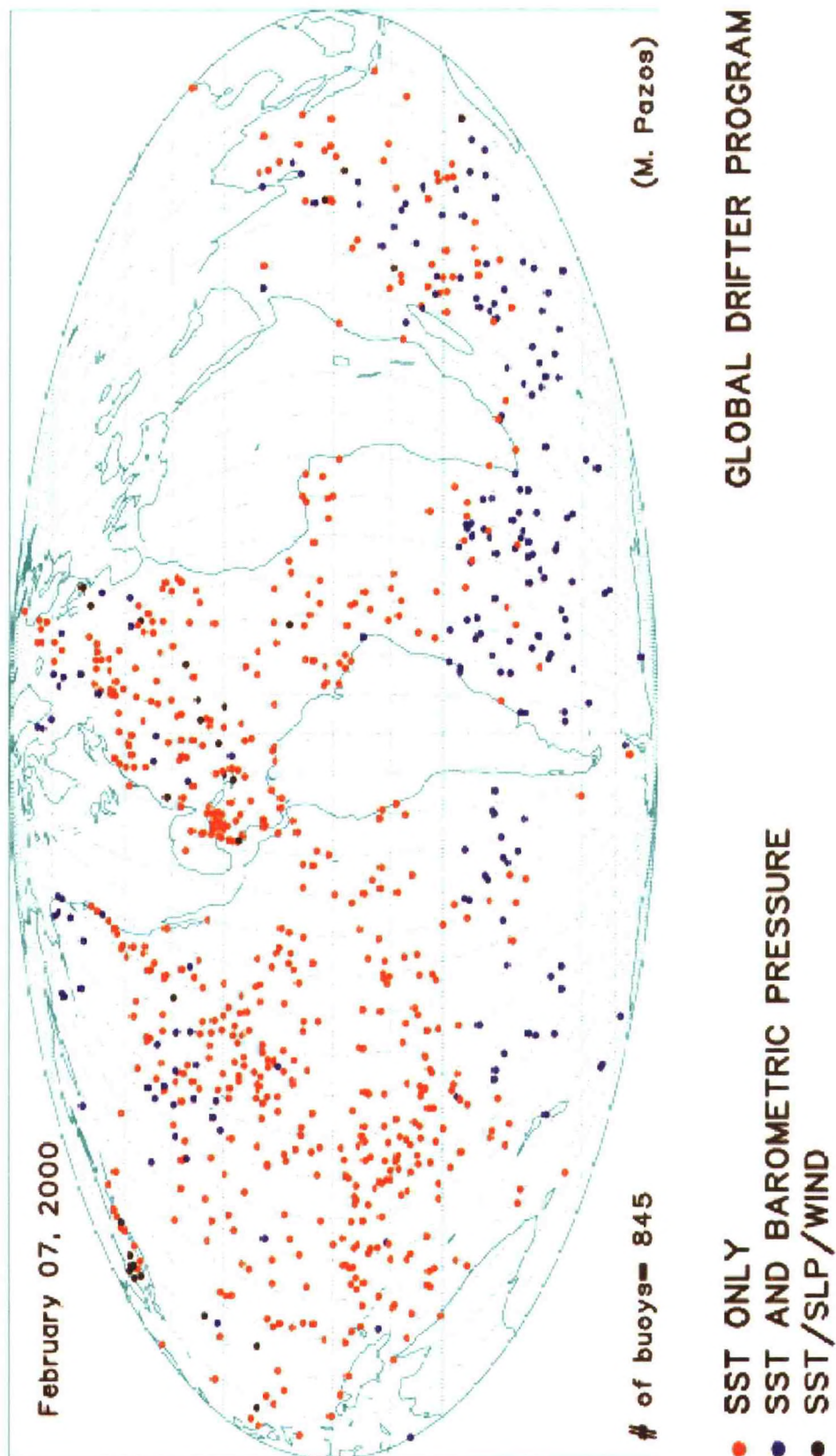
High Density XBT/Autolauncher Program

AOML presently operates a research and developmental High Density XBT/Autolauncher Program utilizing the VOS Program. Two routes (Mediterranean Sea to Miami, FL and New York, NY to San Juan, Puerto Rico) are sampled four times per year by placing ship riders on board to collect XBT temperature data. The XBT probe observations are collected at closely spaced intervals. To enable the ship riders to conduct their operations continuously for the duration of a cruise, engineers at AOML designed an XBT Autolauncher which allows the XBT probes to be launched automatically at preset times and/or positions. In addition to allowing around the clock operations, by deploying XBT probes off the fan tail we reduce potential XBT probe failures. The mission is to measure the seasonal to interannual temperature variability in the upper ocean heat content and transport across the center of the subtropical gyre. This effort will improve our ability to predict important climatic fluctuations such as the North Atlantic Oscillation. Plans are to integrate the Autolauncher System with SEAS 2000 to improve positioning via GPS and facilitate the real-time transmission of these data to the GOOS Center.

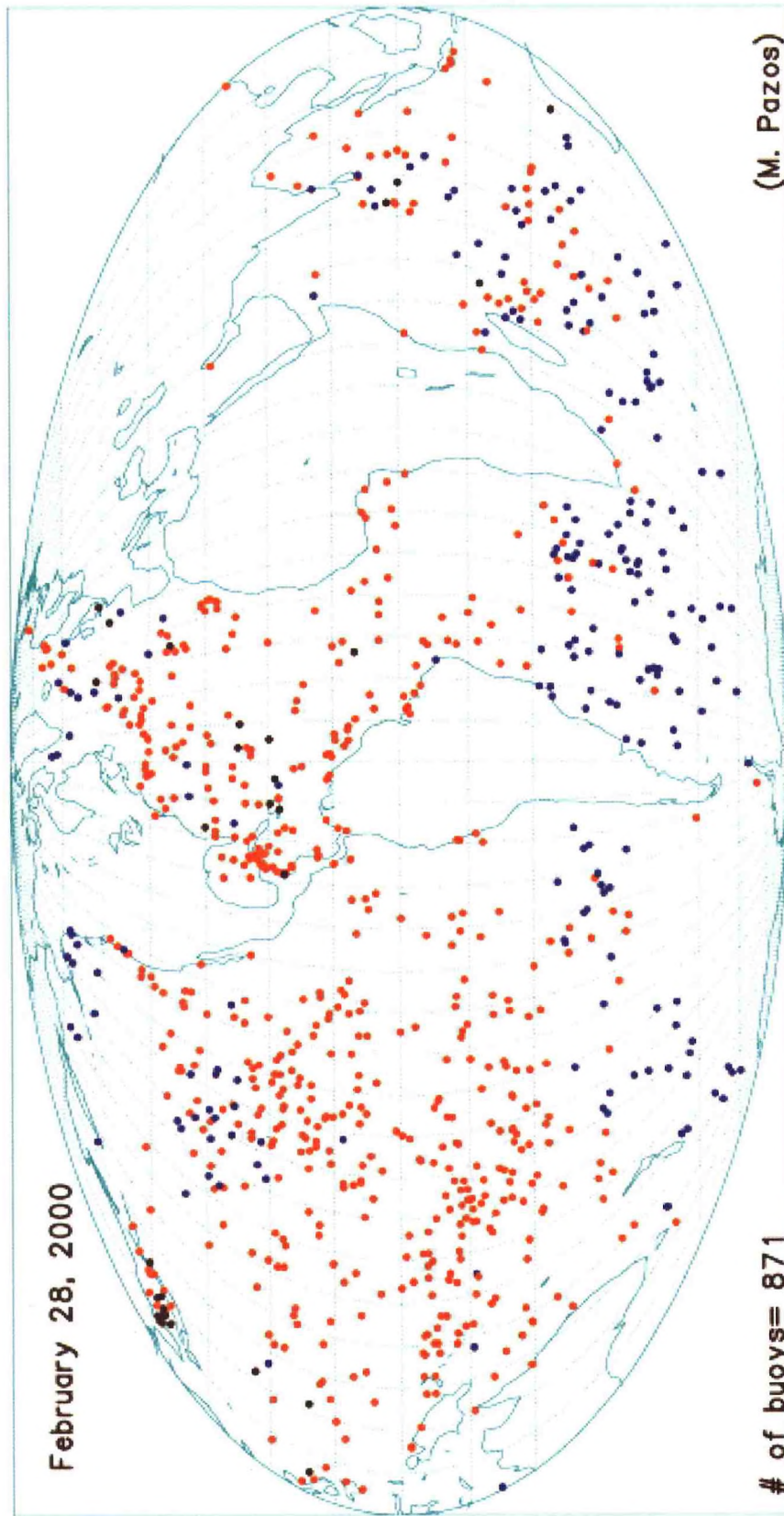
GOOS Center Products

Status of Global Drifter Arrays from January-December 2000

The number in the lower left corner of the plot indicates the number of drifters that were in the water as of the date listed in the upper left corner.



Status of Global Drifter Arrays (cont'd)



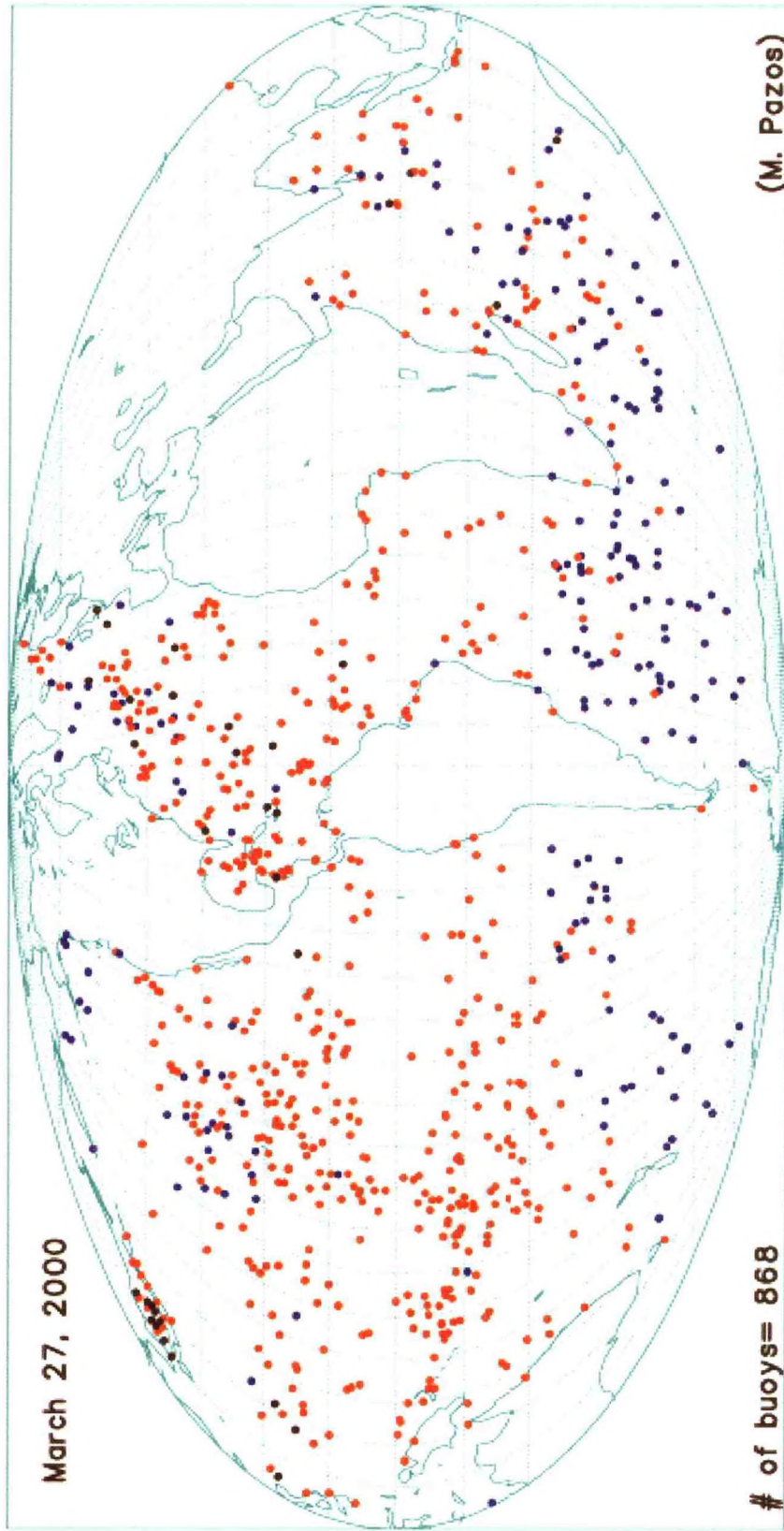
of buoys= 871

(M. Pazos)

- SST ONLY
- SST AND BAROMETRIC PRESSURE
- SST/SLP/WIND

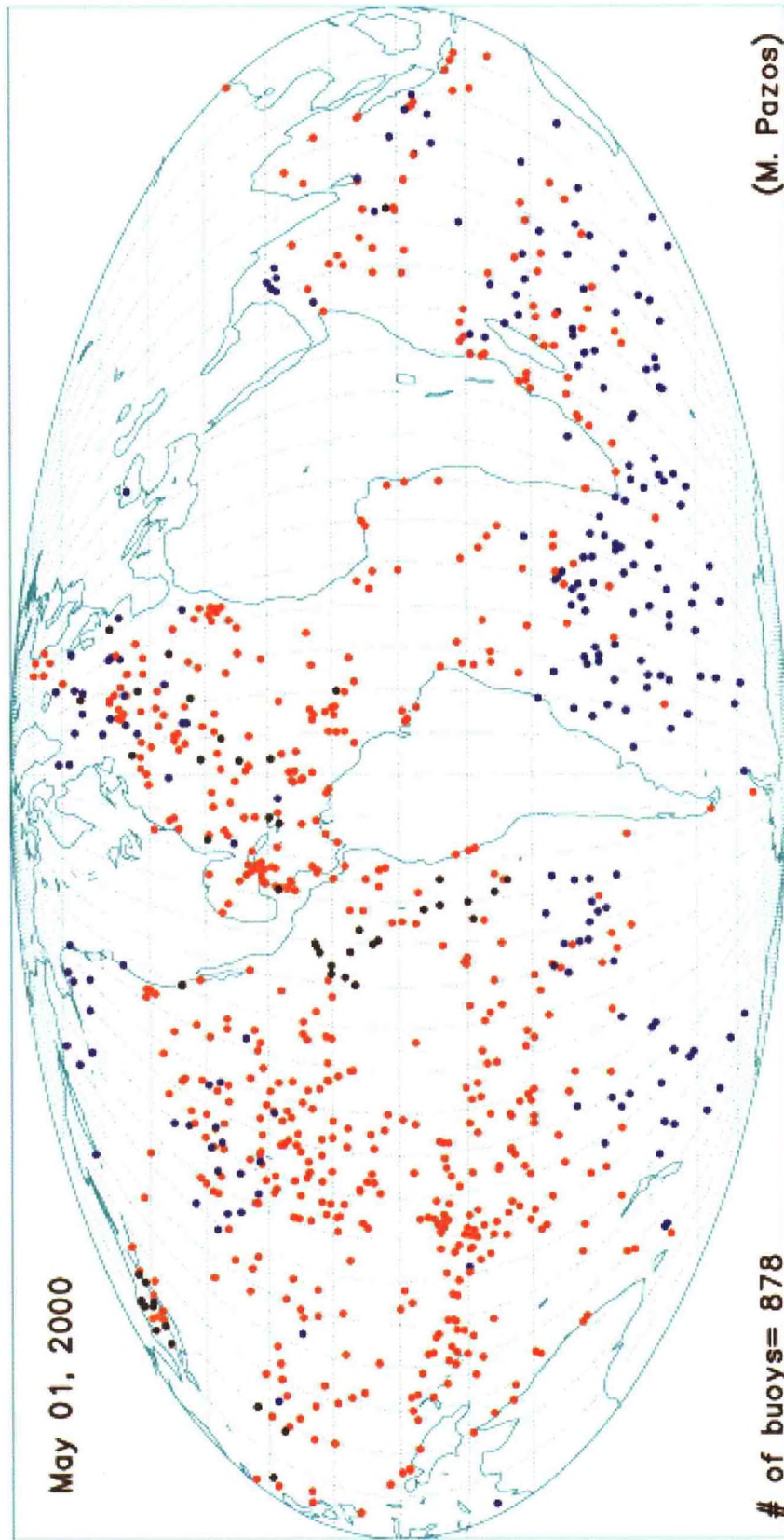
GLOBAL DRIFTER PROGRAM

Status of Global Drifter Arrays (cont'd)



- SST ONLY
 - SST AND BAROMETRIC PRESSURE
 - SST/SLP/WIND
- GLOBAL DRIFTER PROGRAM

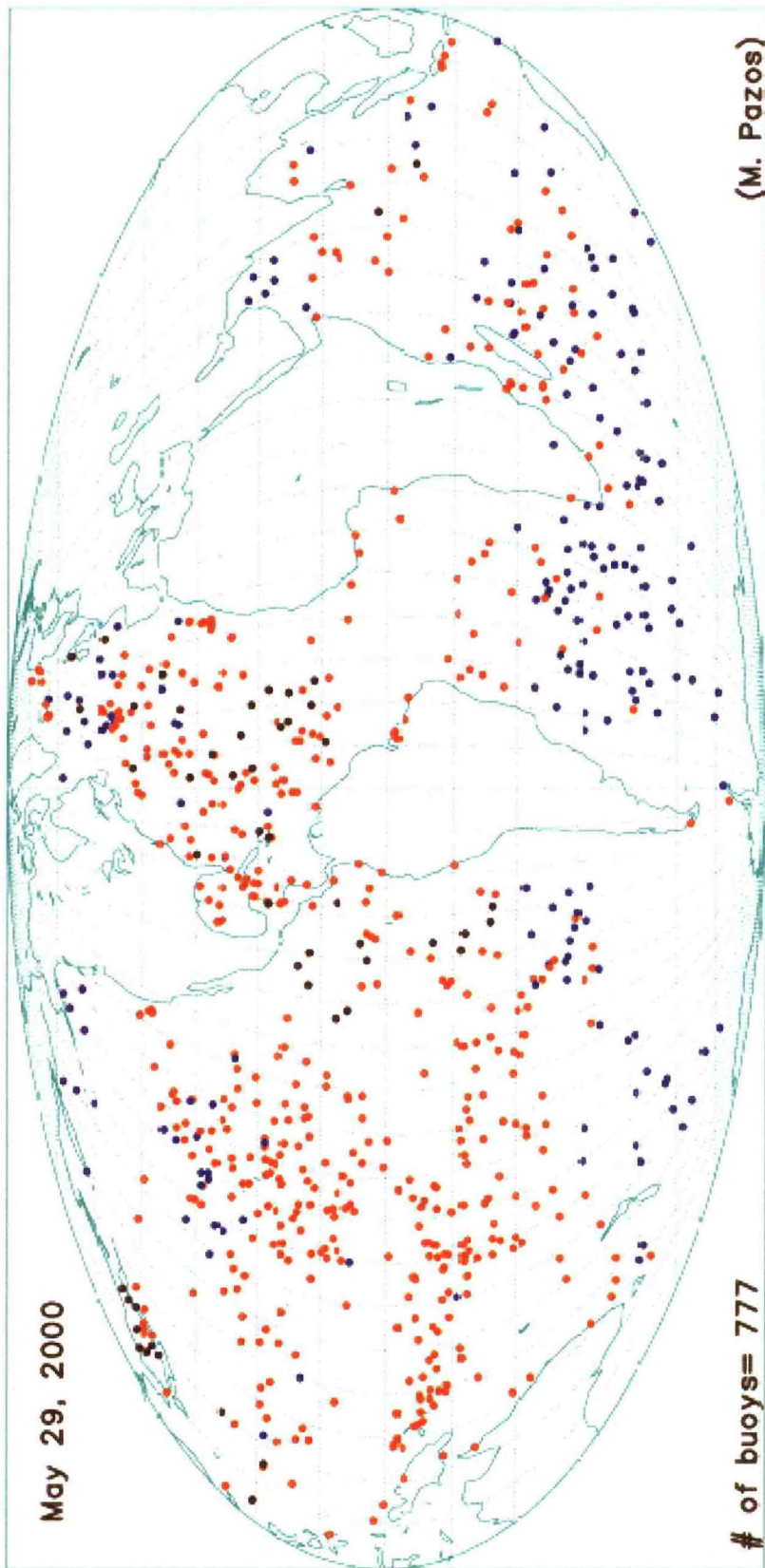
Status of Global Drifter Arrays (cont'd)



GLOBAL DRIFTER PROGRAM

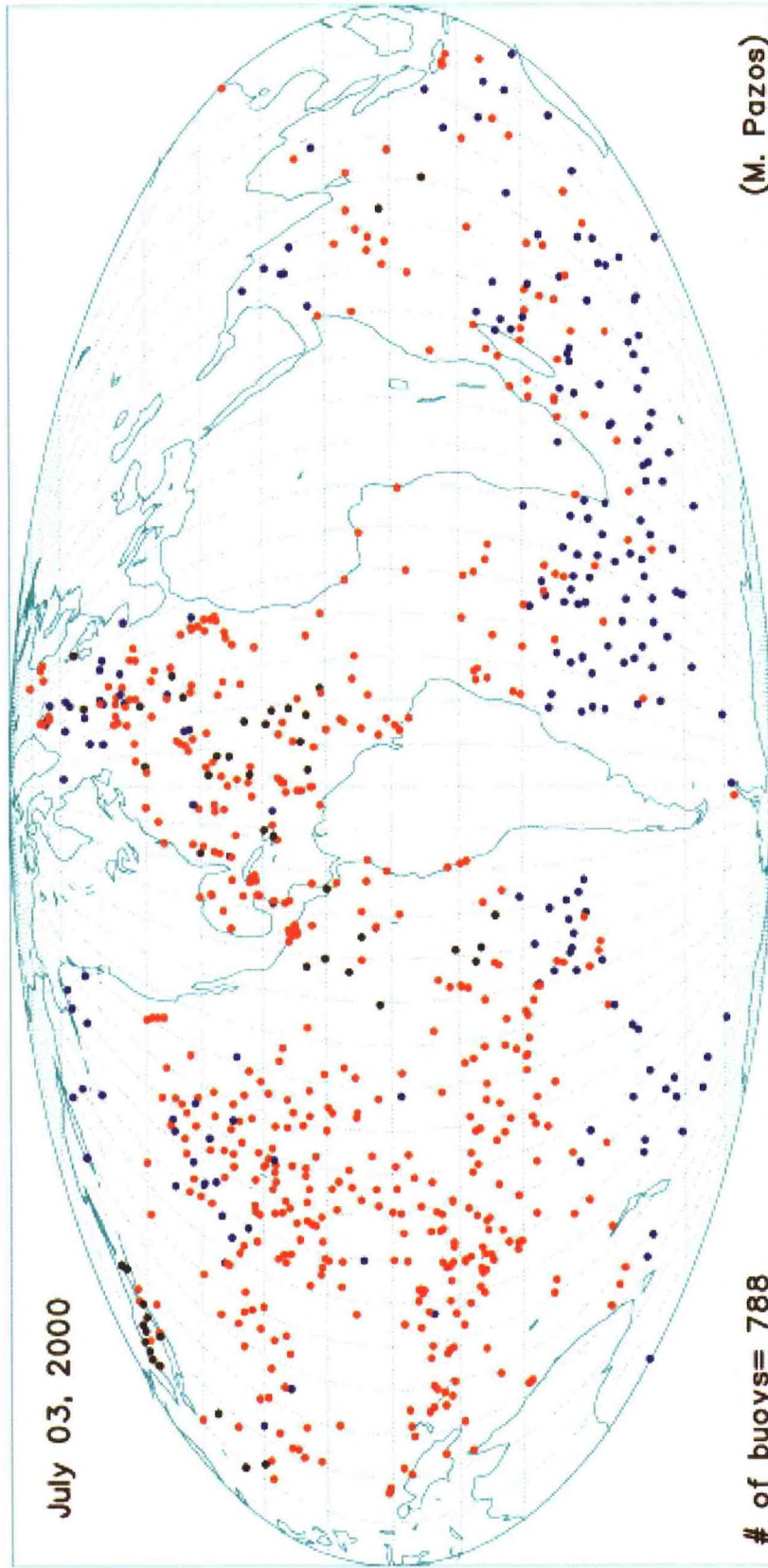
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- SST AND BAROMETRIC PRESSURE
- SST/SLP/WIND

Status of Global Drifter Arrays (cont'd)

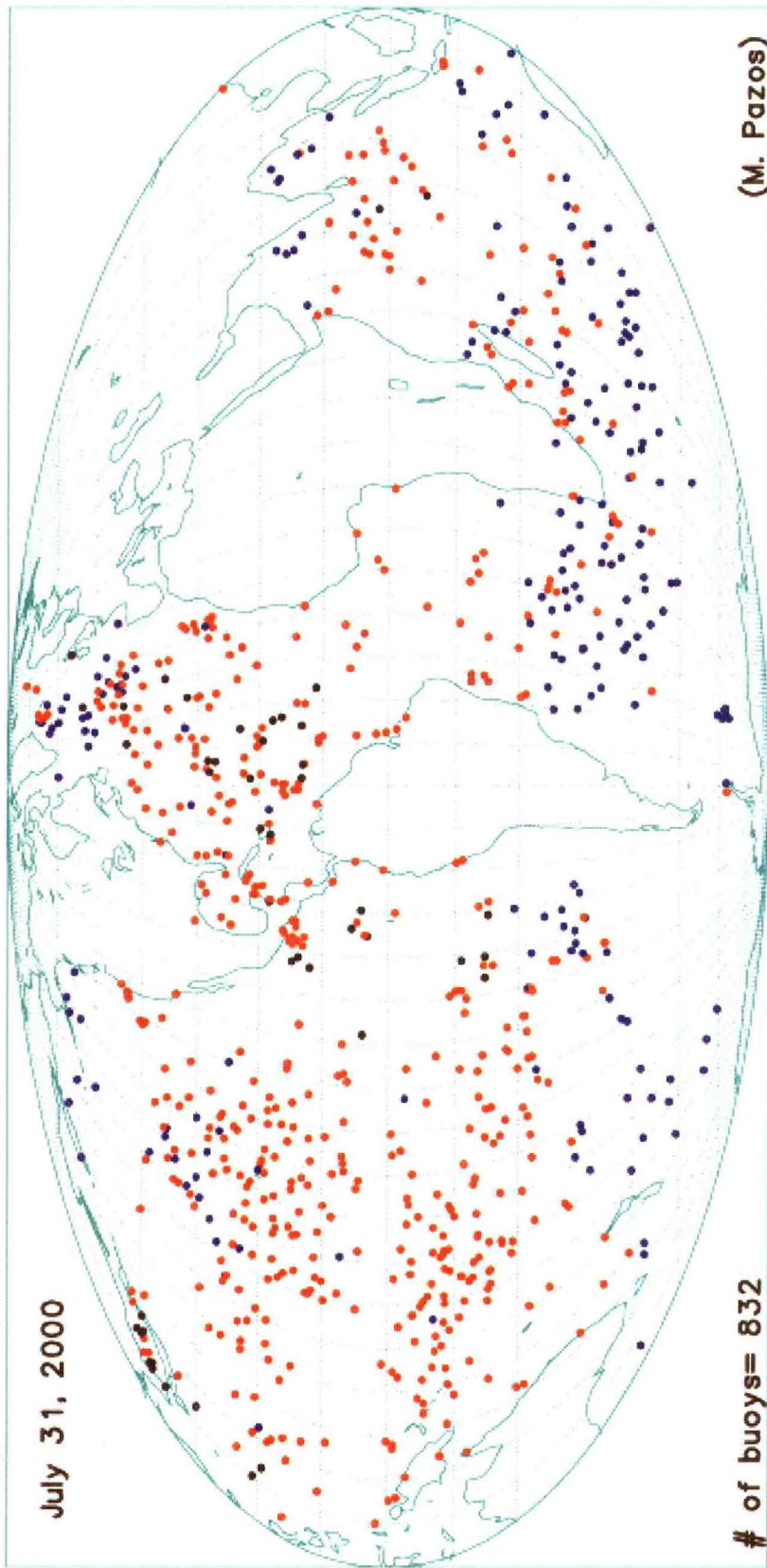


- SST ONLY
 - SST AND BAROMETRIC PRESSURE
 - SST/SLP/WIND
- GLOBAL DRIFTER PROGRAM

Status of Global Drifter Arrays (cont'd)



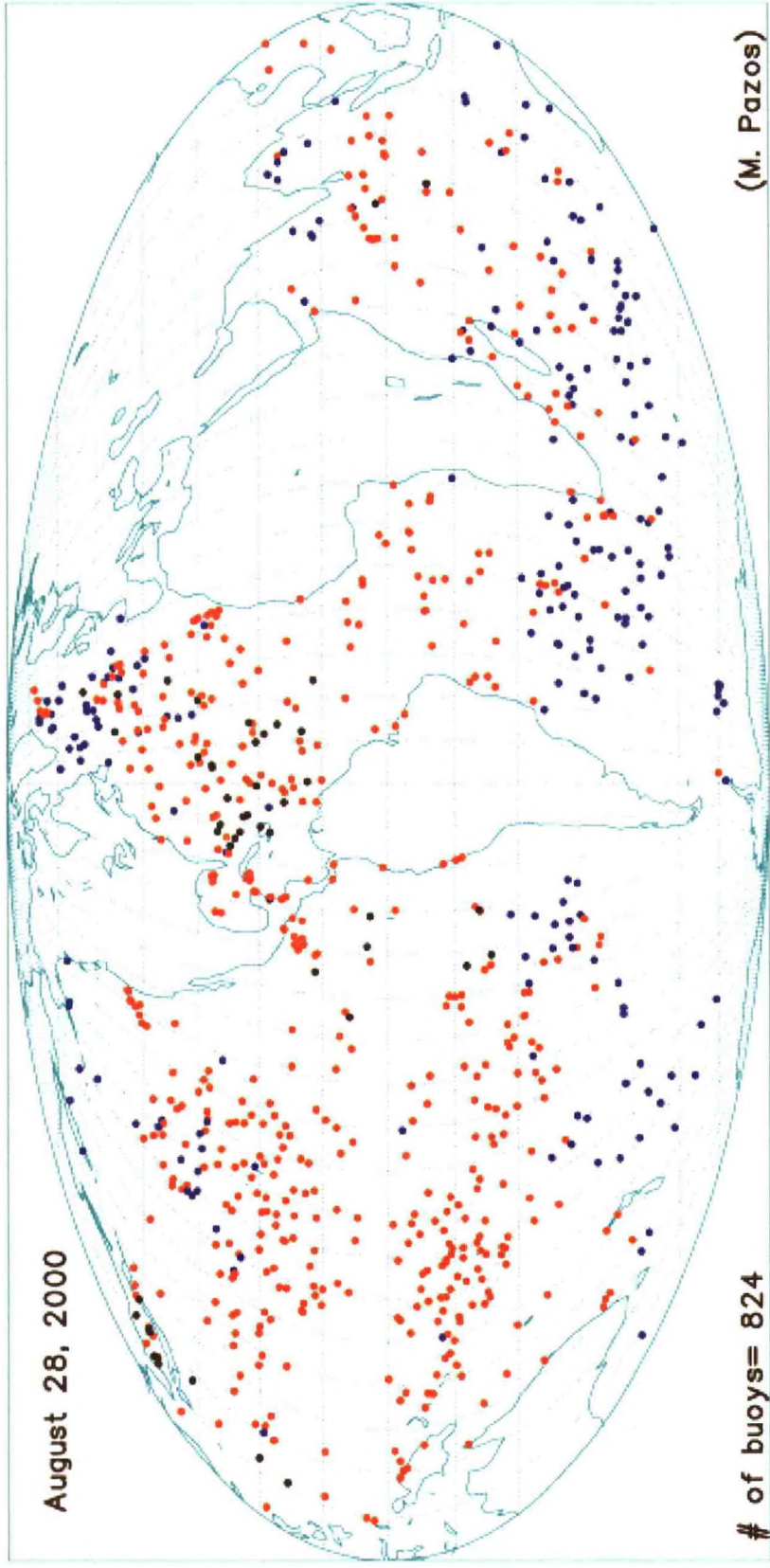
Status of Global Drifter Arrays (cont'd)



GLOBAL DRIFTER PROGRAM

- SST ONLY
- SST AND BAROMETRIC PRESSURE
- SST/SLP/WIND

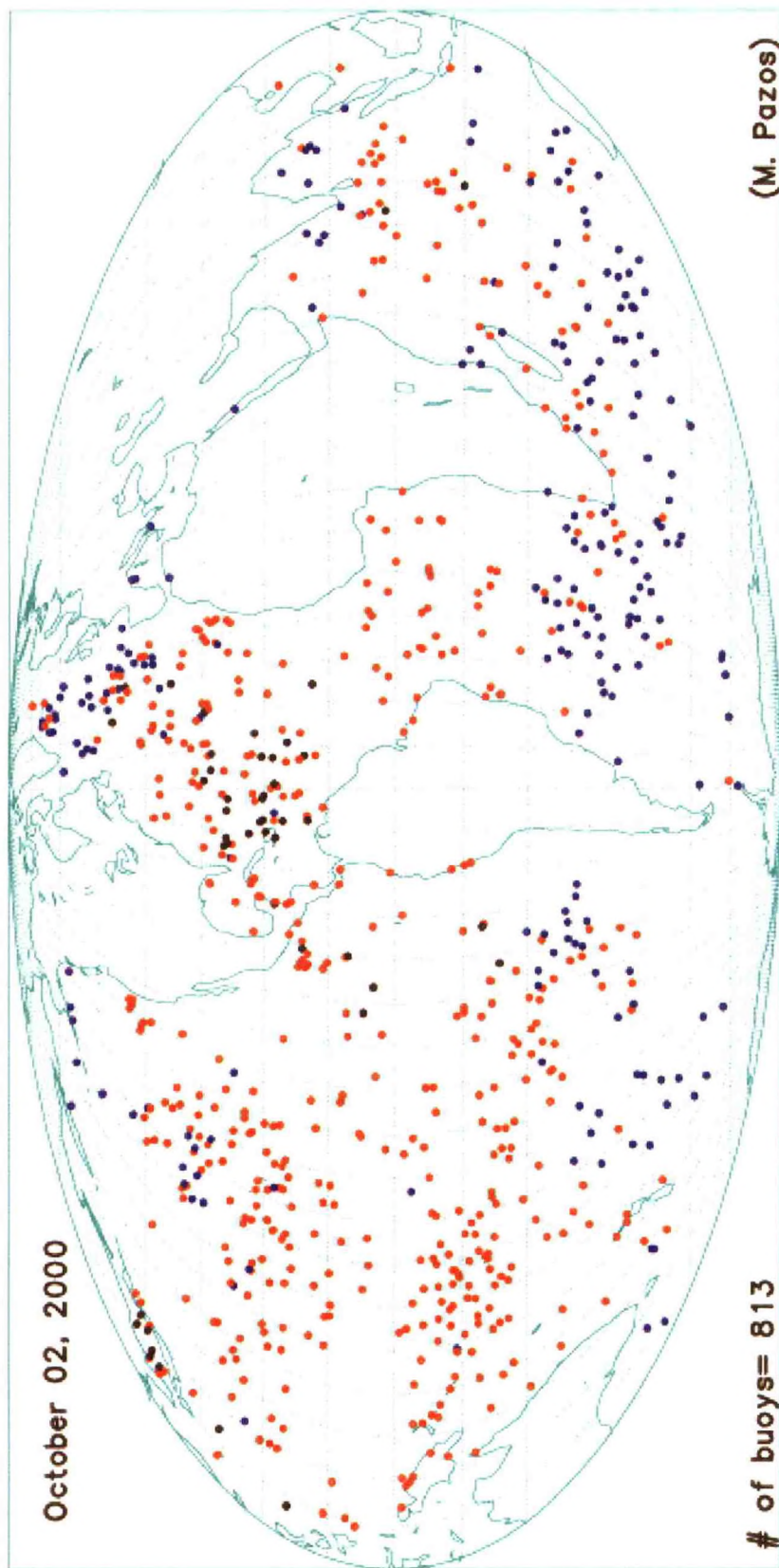
Status of Global Drifter Arrays (cont'd)



GLOBAL DRIFTER PROGRAM

- SST ONLY
- SST AND BAROMETRIC PRESSURE
- SST/SLP/WIND

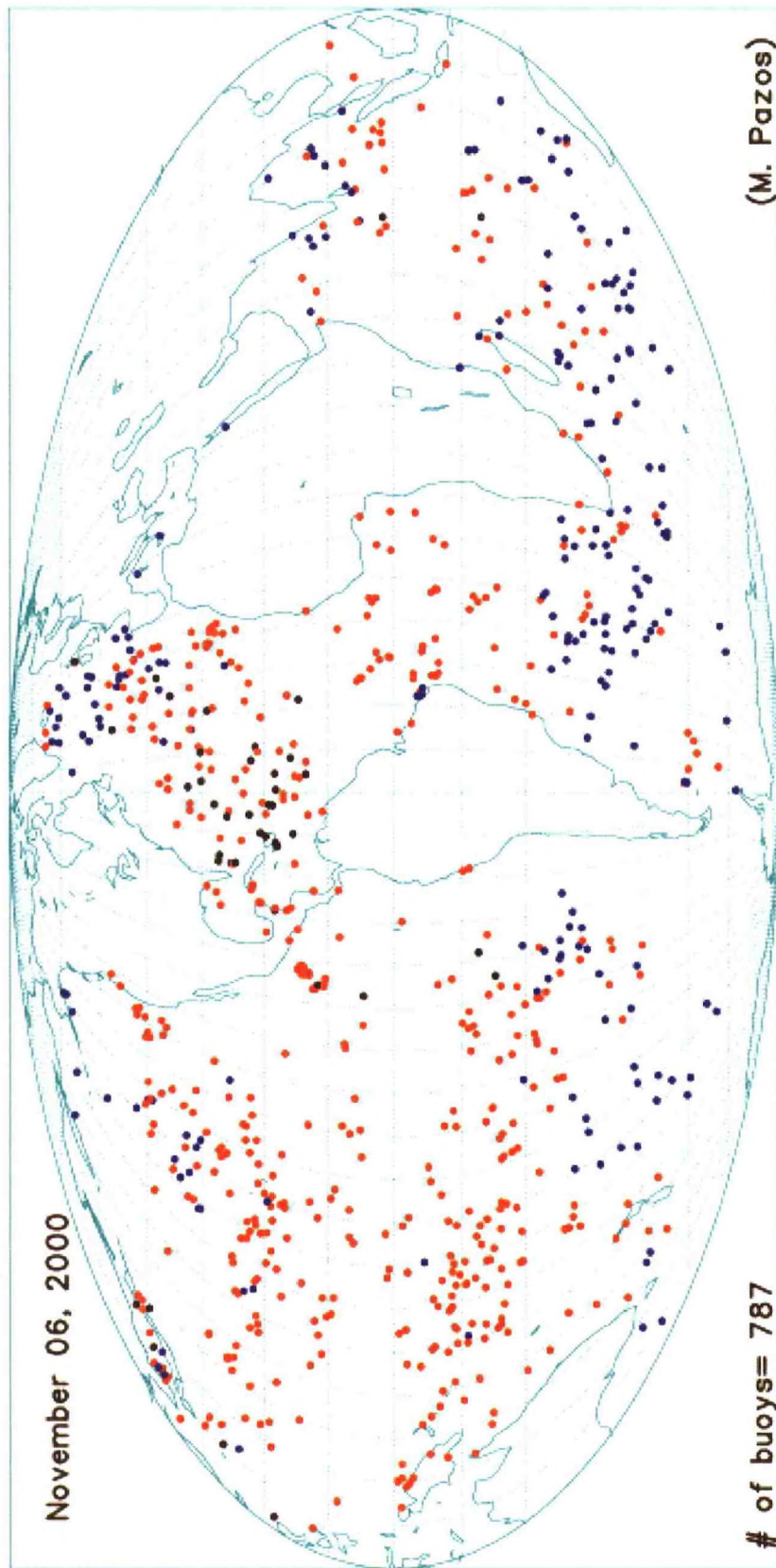
Status of Global Drifter Arrays (cont'd)



GLOBAL DRIFTER PROGRAM

- SST ONLY
- SST AND BAROMETRIC PRESSURE
- SST/SLP/WIND

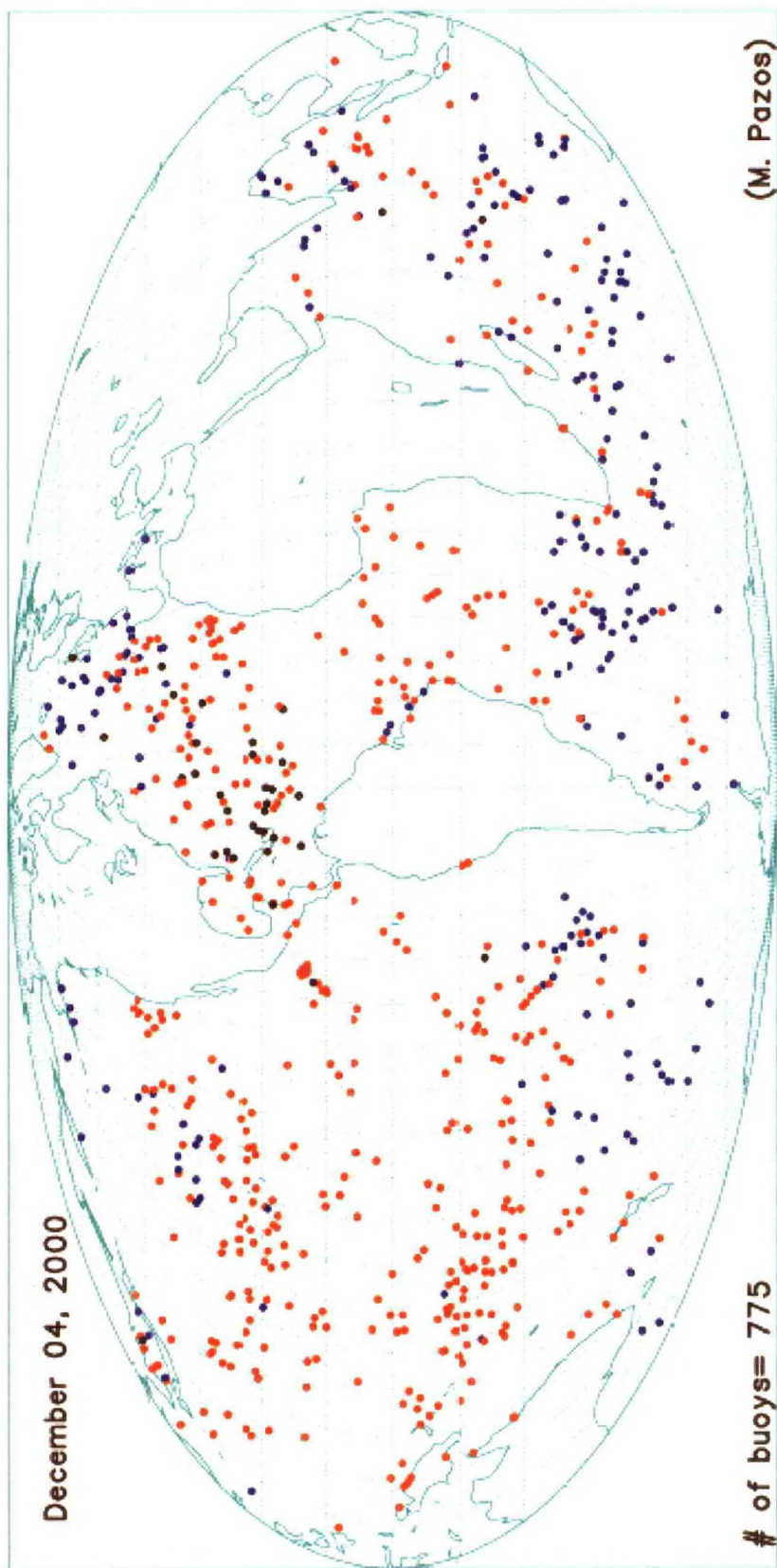
Status of Global Drifter Arrays (cont'd)



GLOBAL DRIFTER PROGRAM

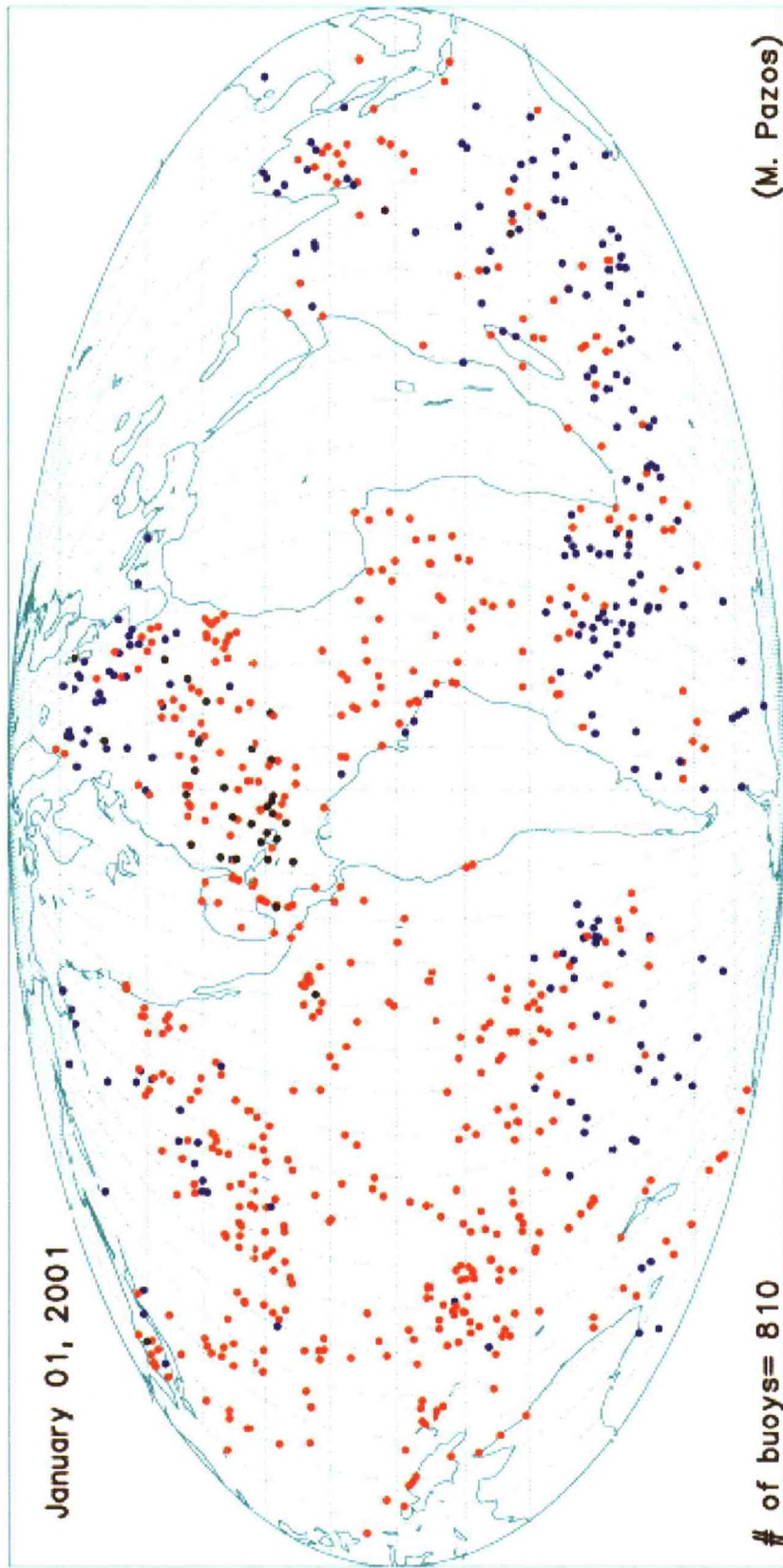
- SST ONLY
- SST AND BAROMETRIC PRESSURE
- SST/SLP/WIND

Status of Global Drifter Arrays (cont'd)



GLOBAL DRIFTER PROGRAM

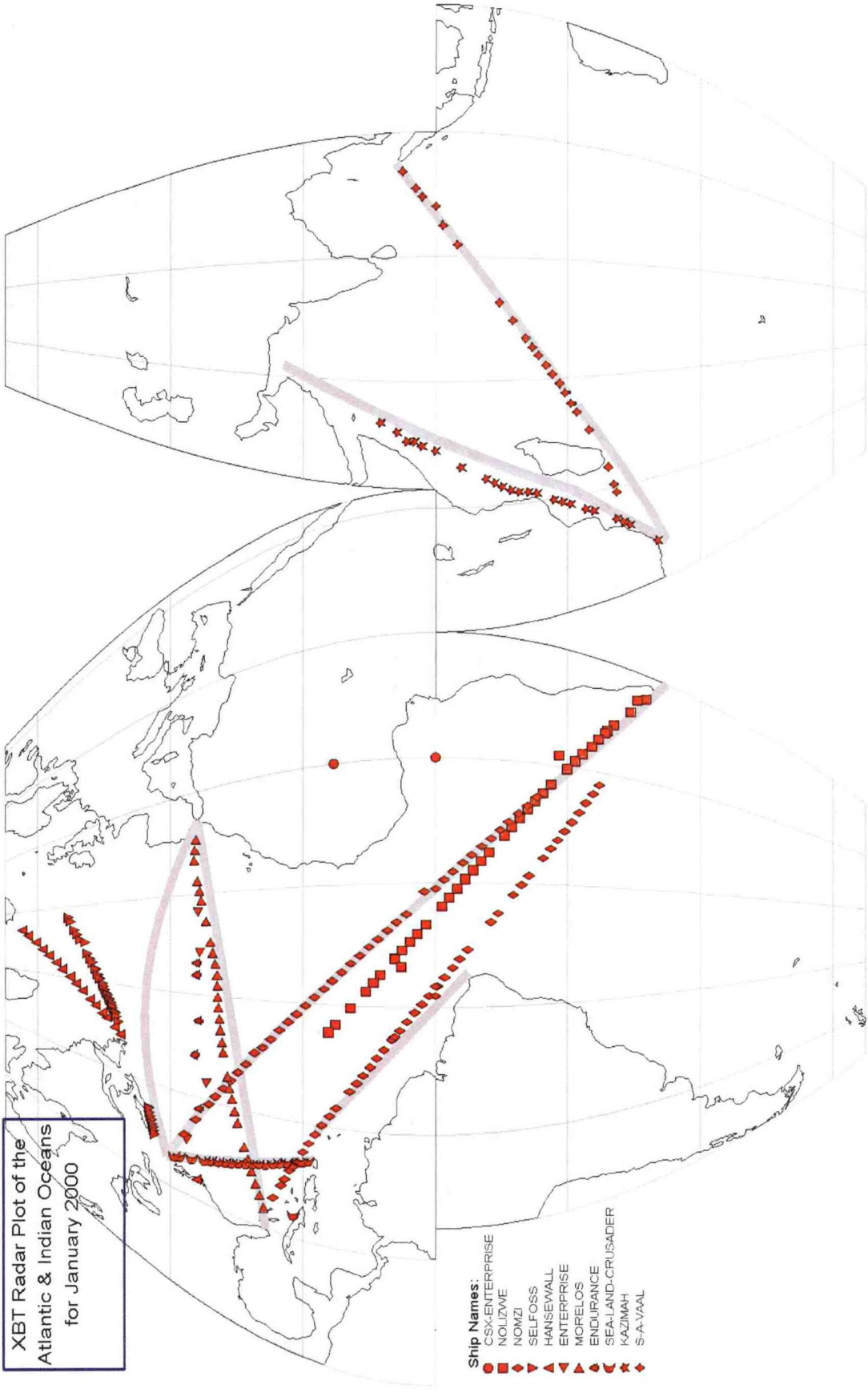
Status of Global Drifter Arrays (cont'd)

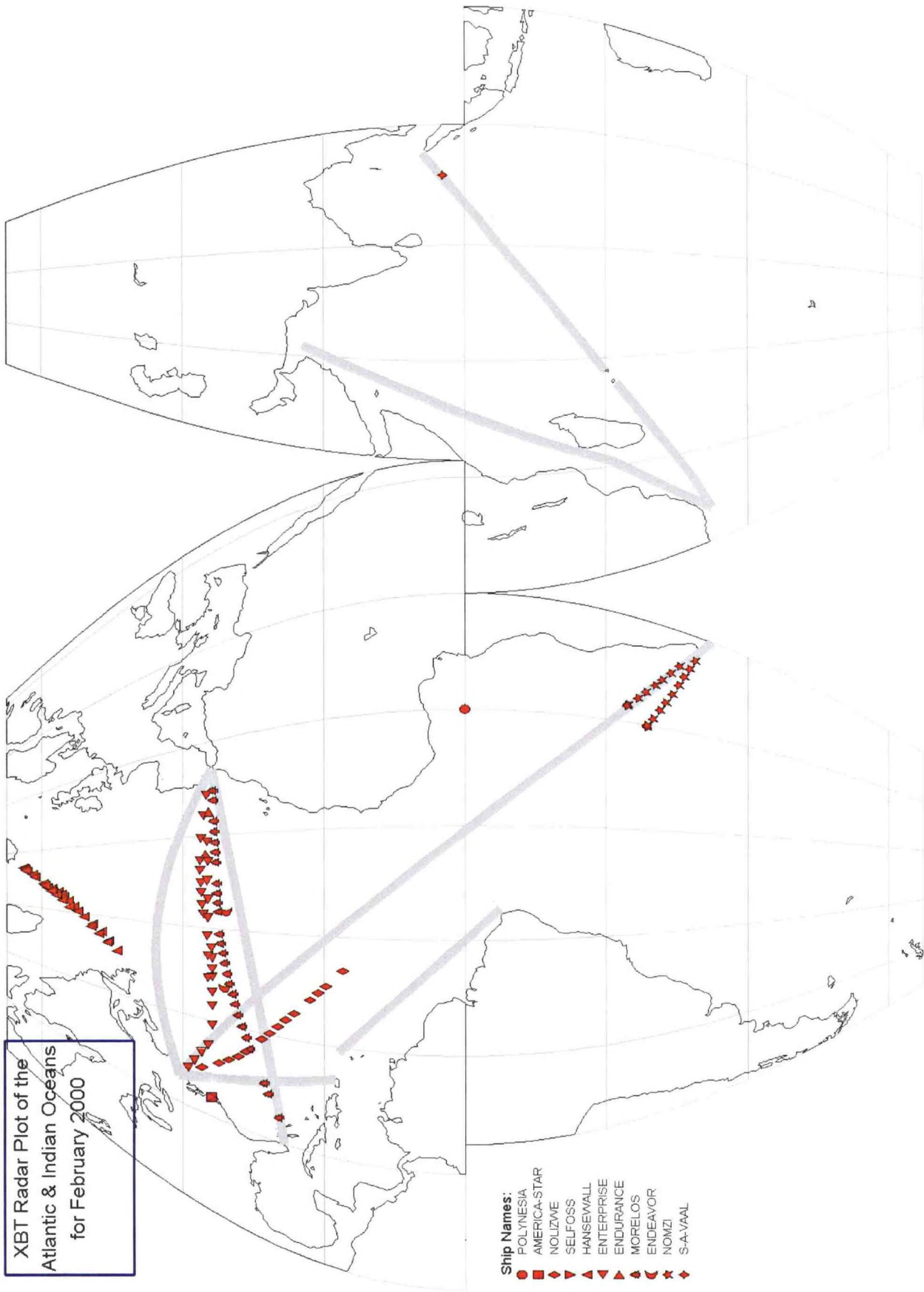


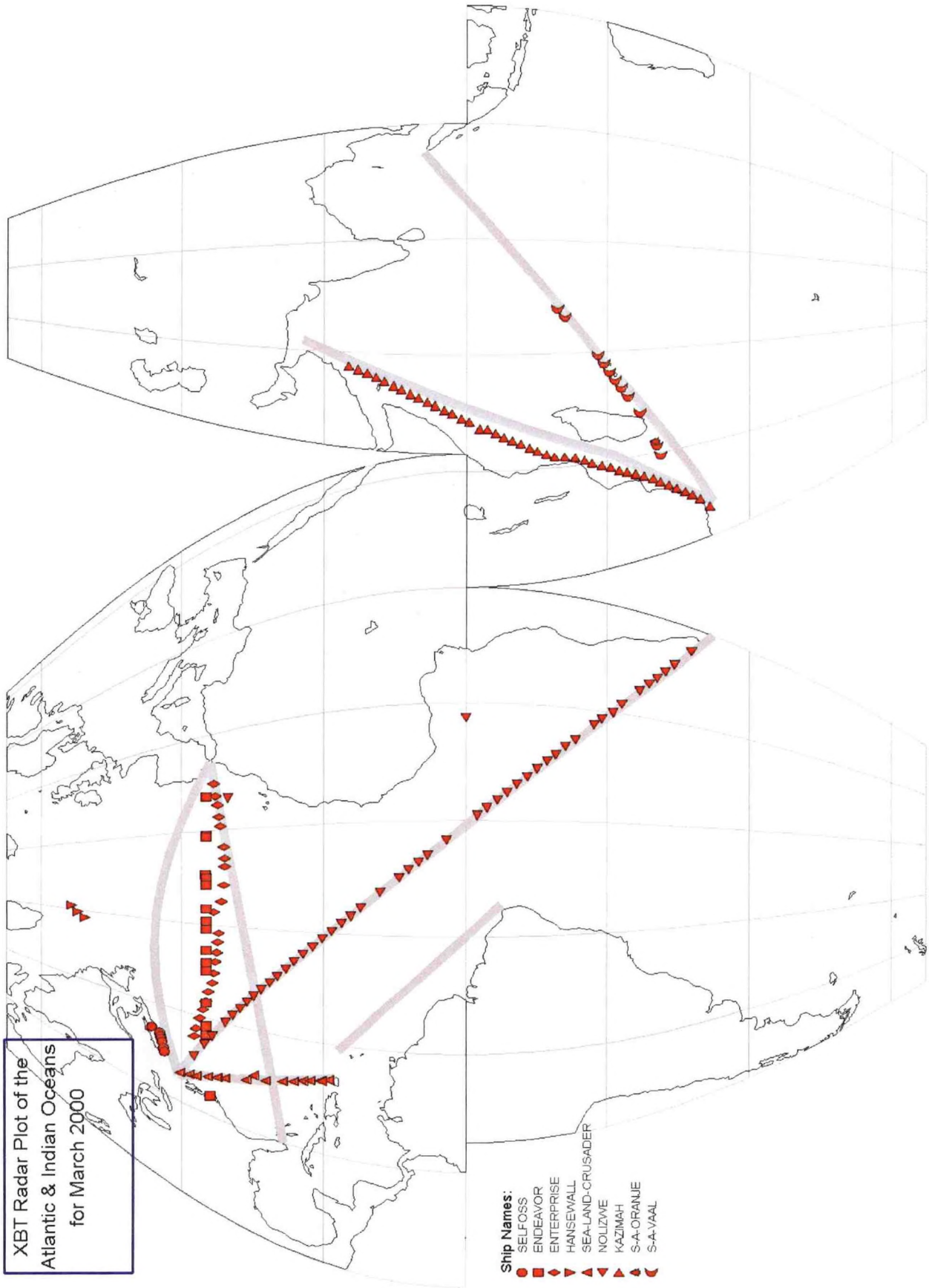
GLOBAL DRIFTER PROGRAM

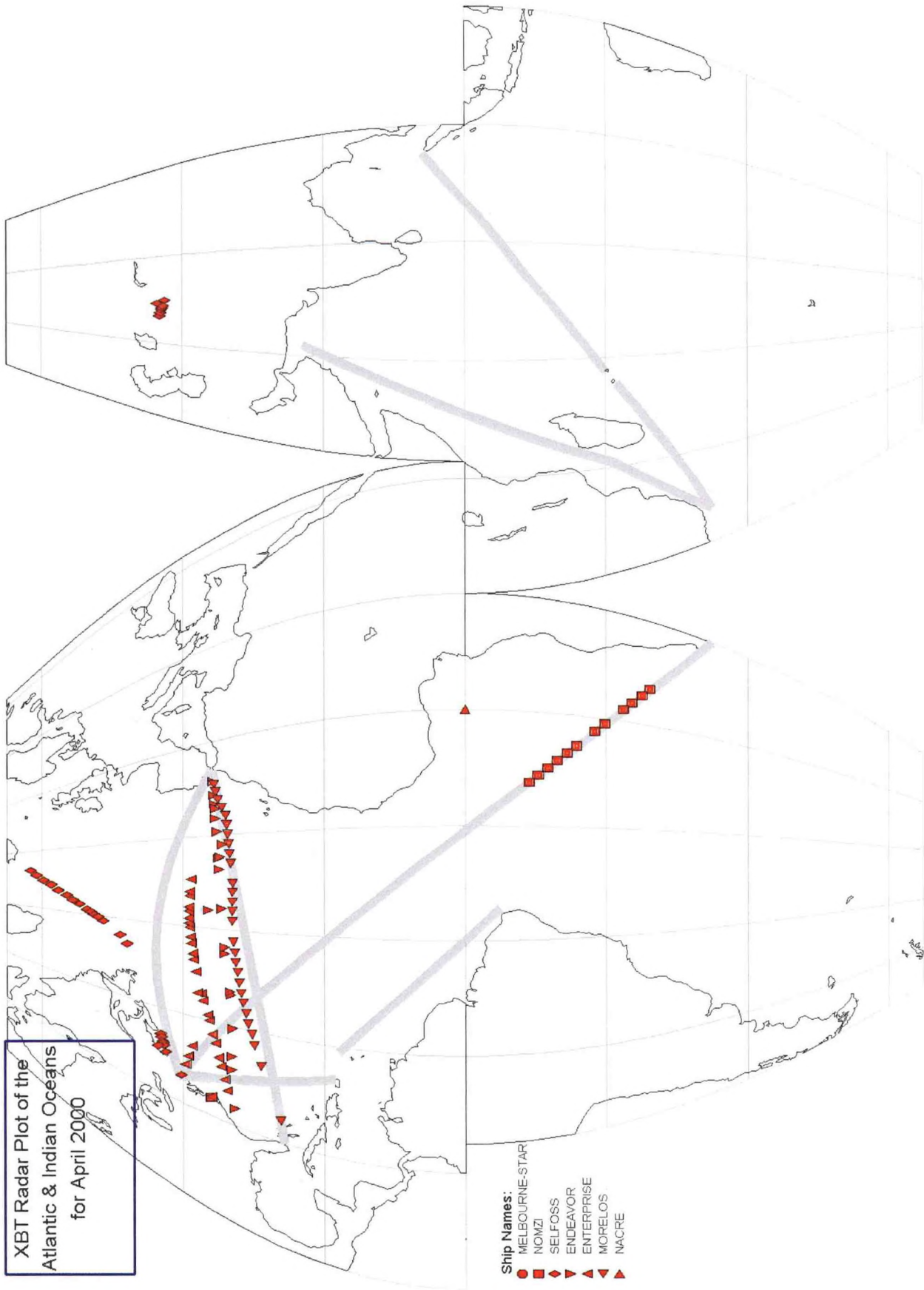
- SST ONLY
- SST AND BAROMETRIC PRESSURE
- SST/SLP/WIND

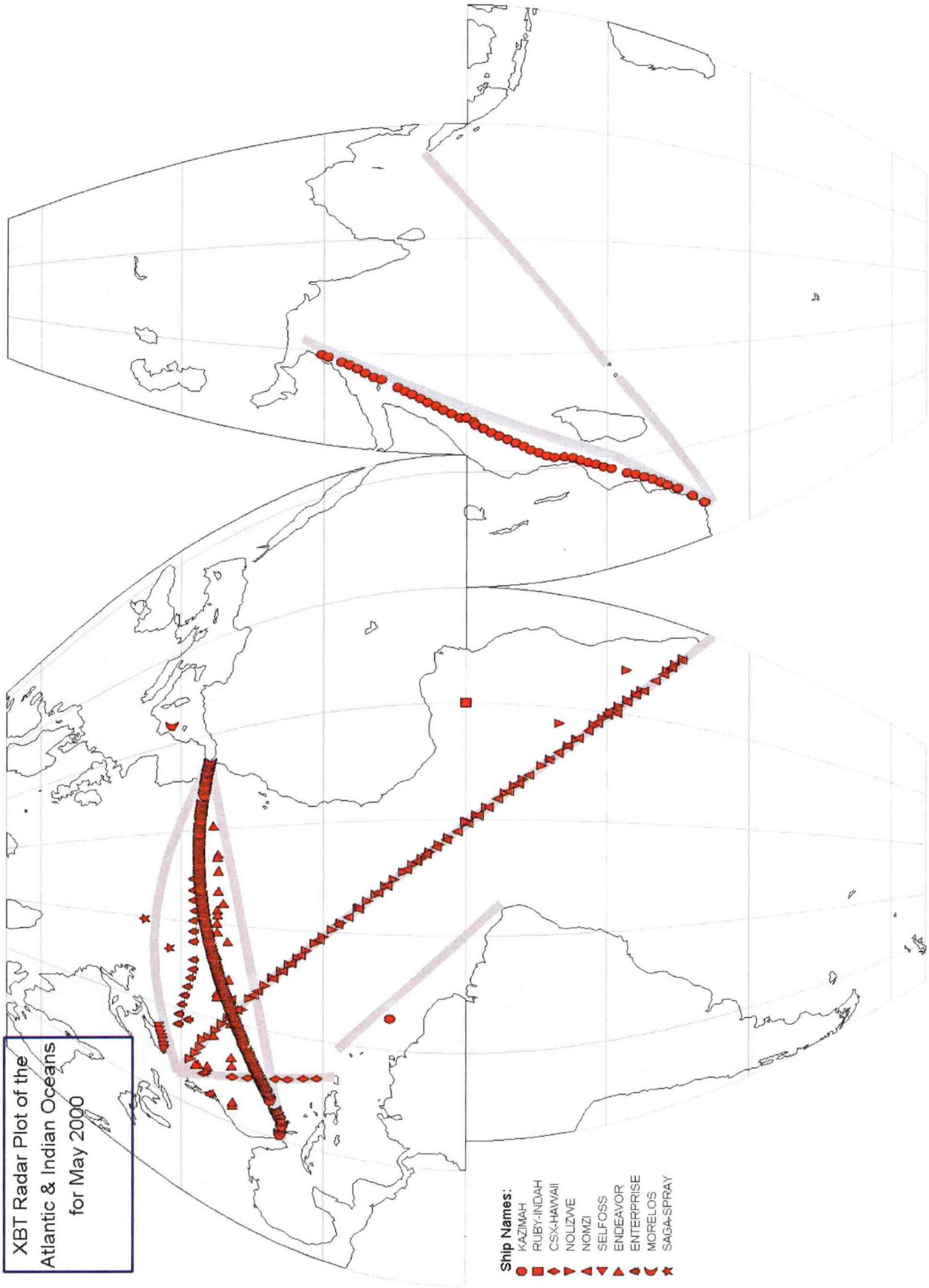
**Monthly Radar plots of the XBT network
(January through December 2000)**

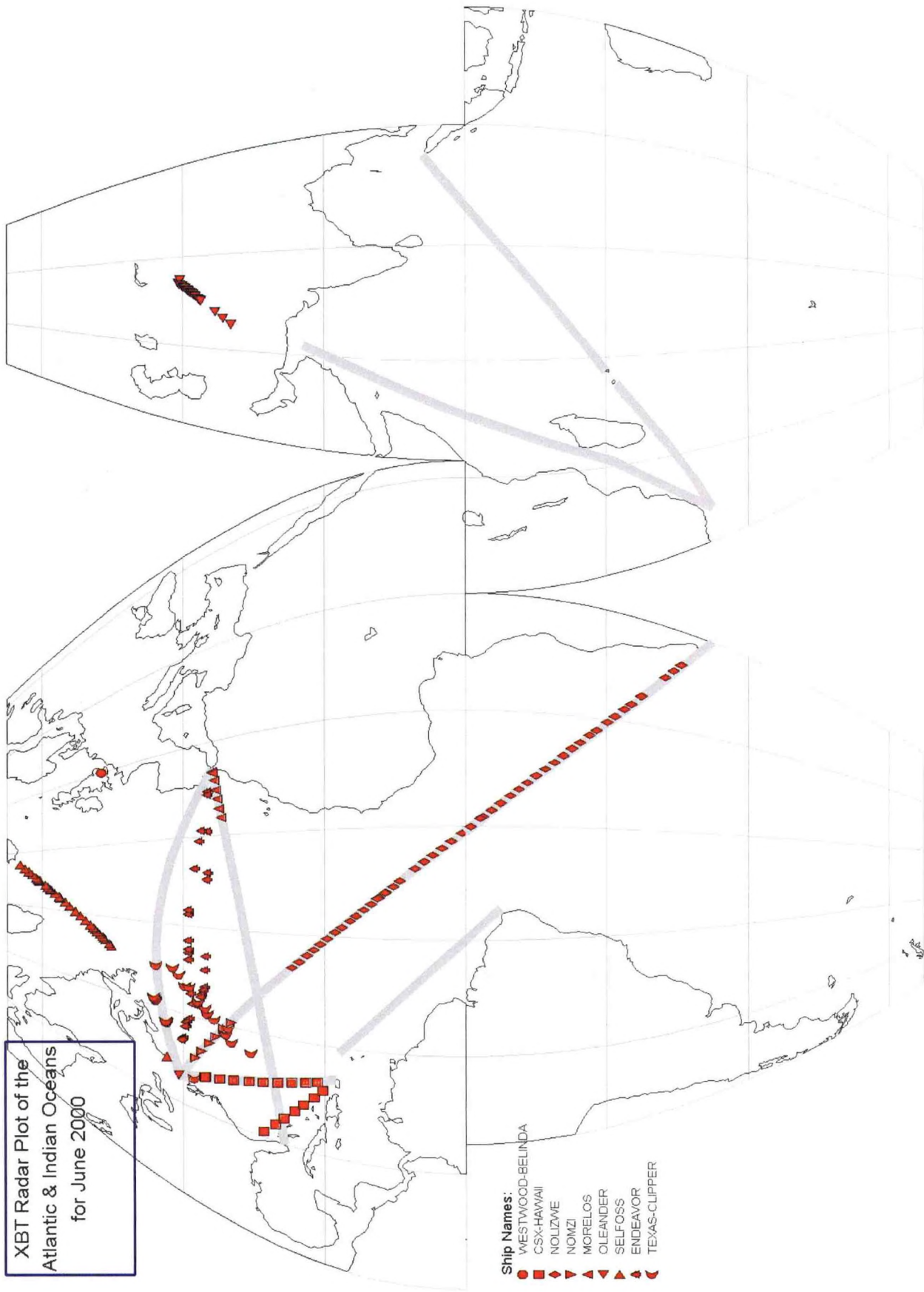


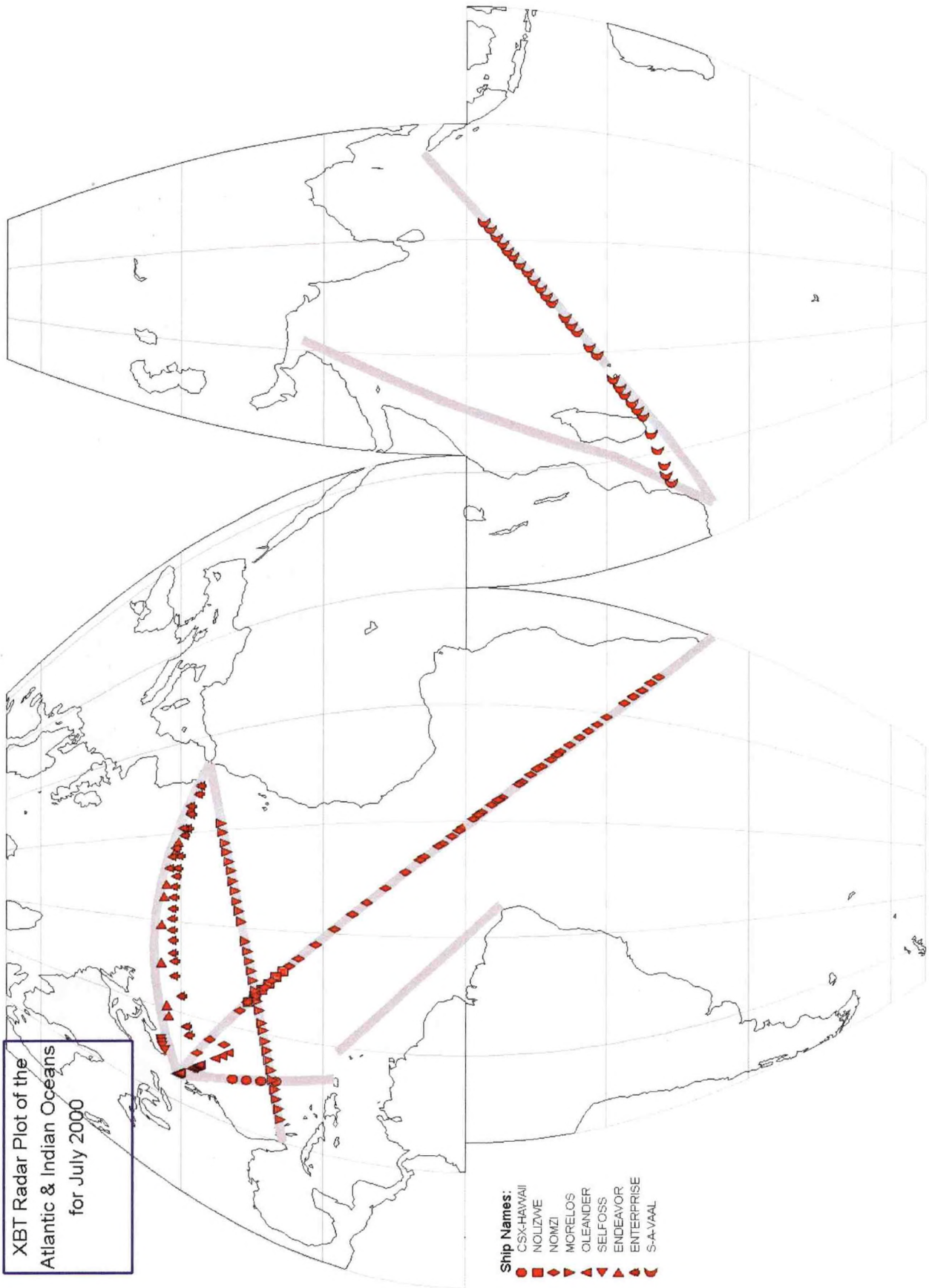


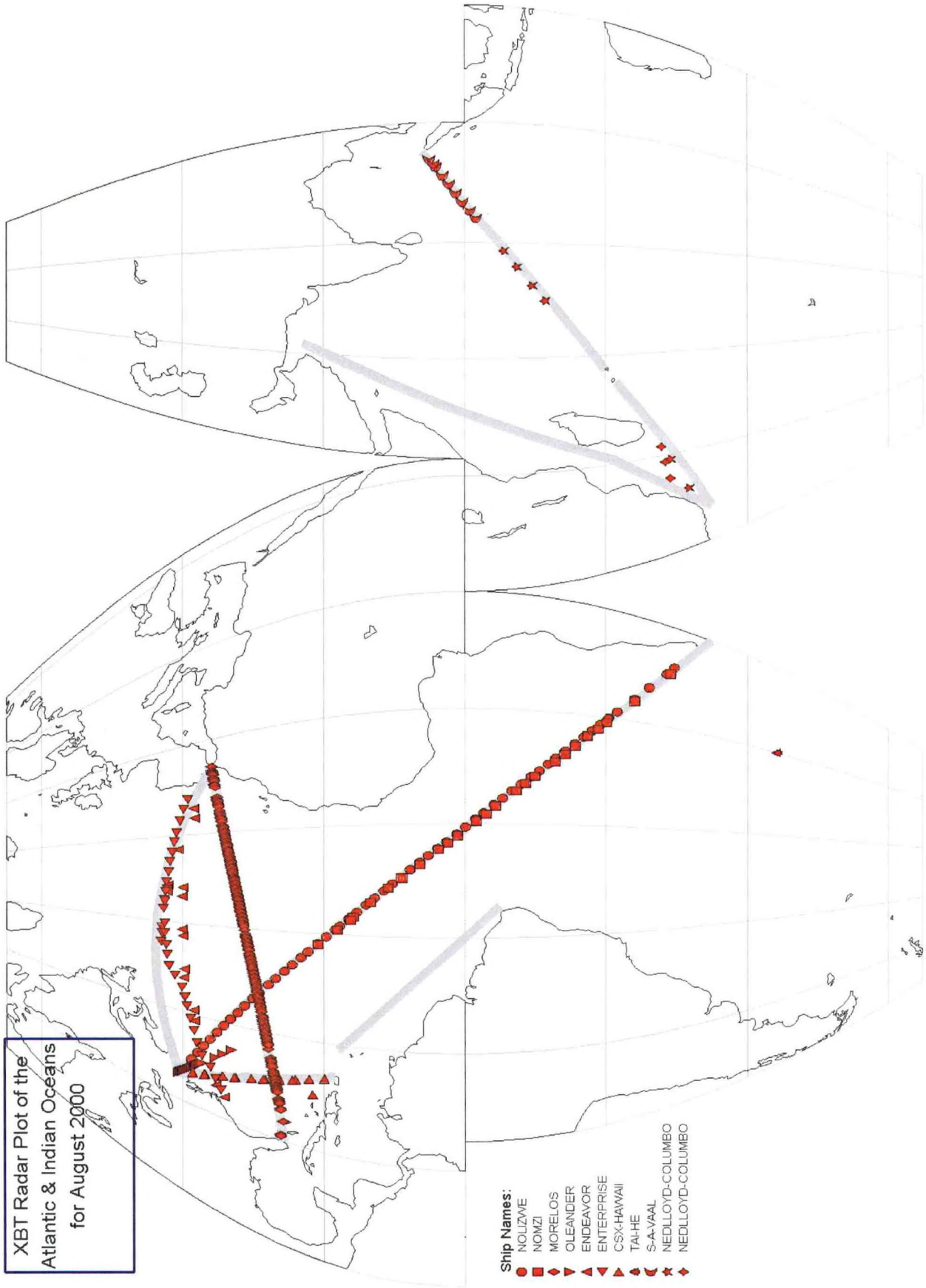


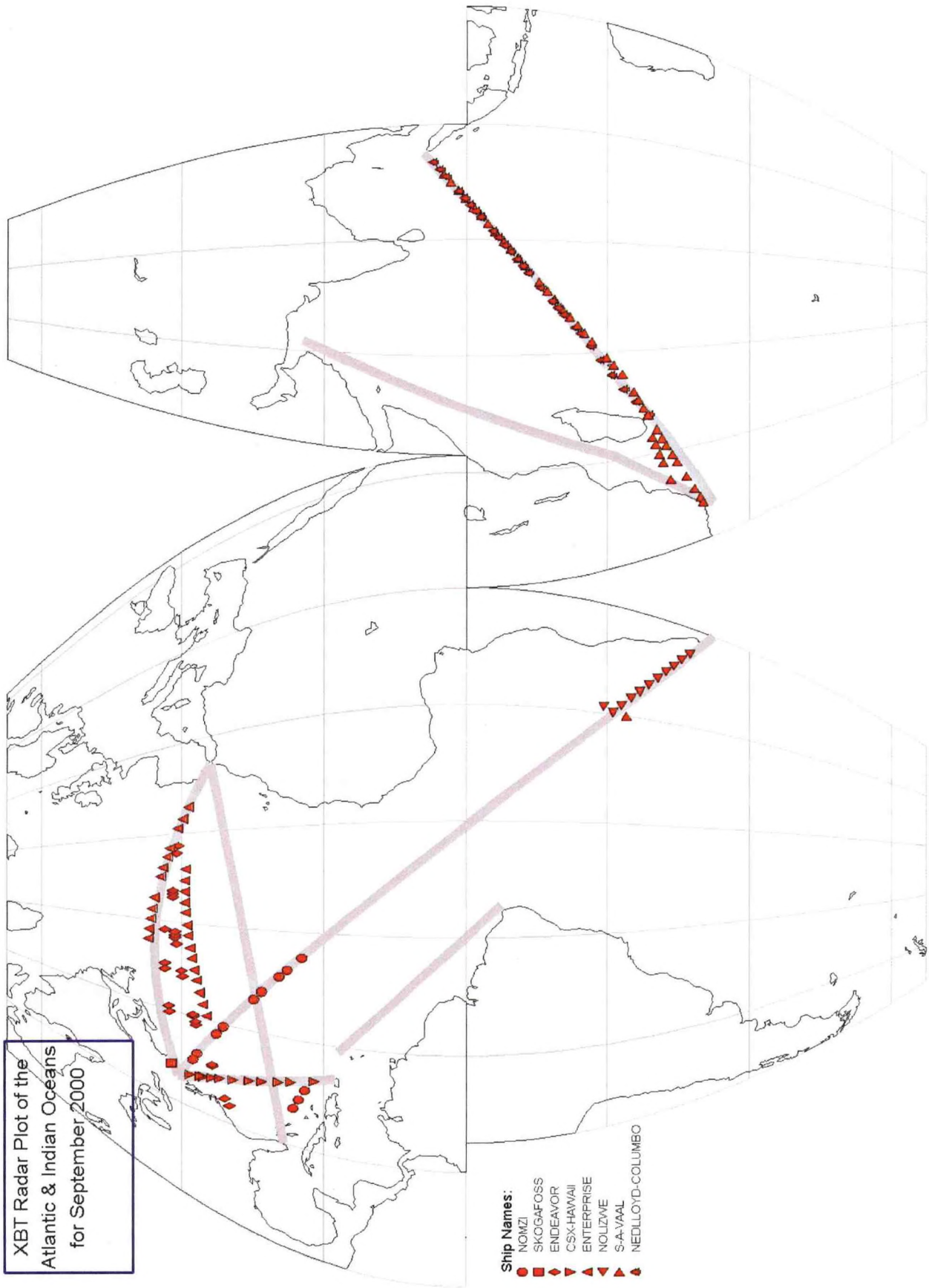




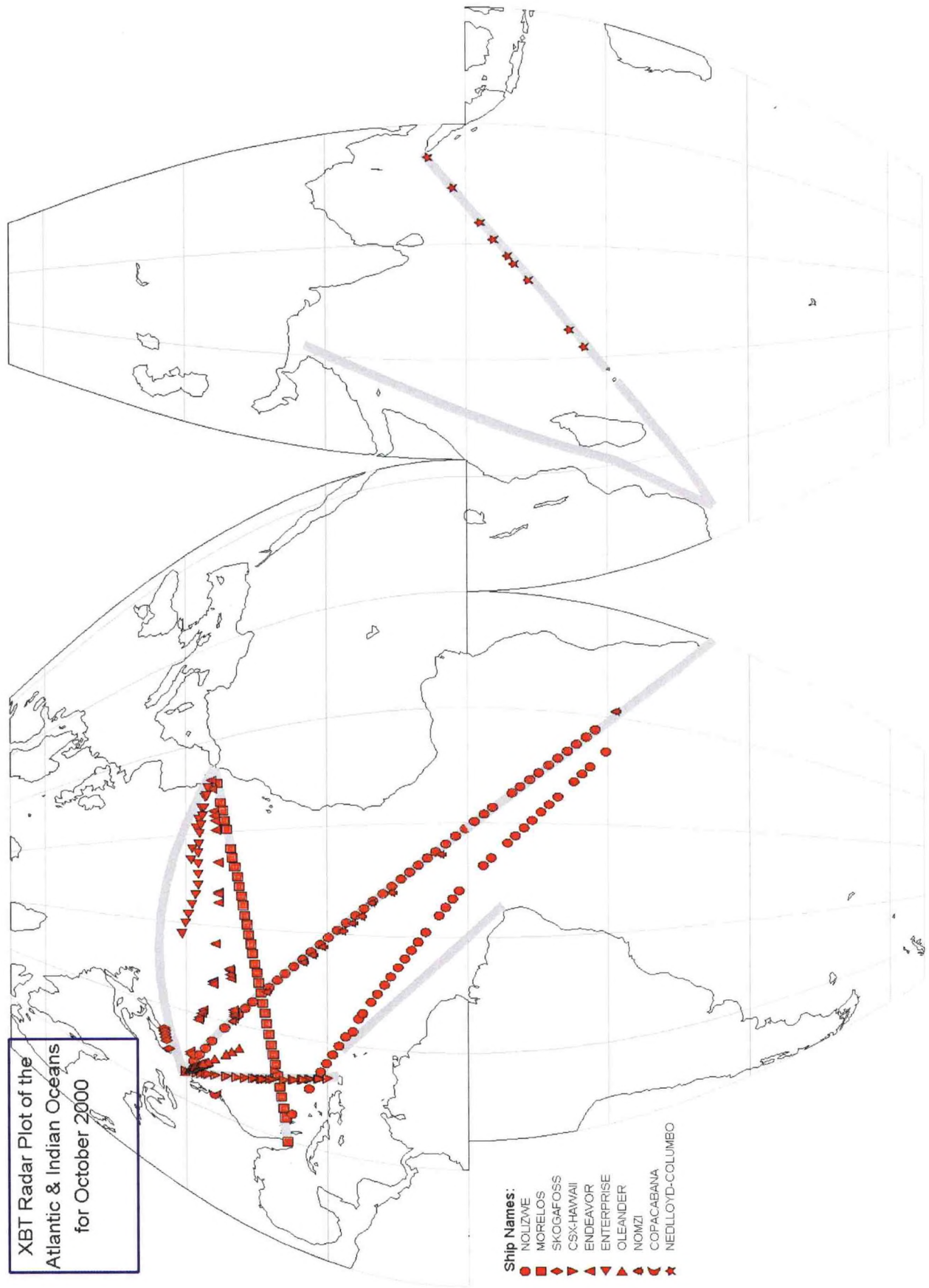




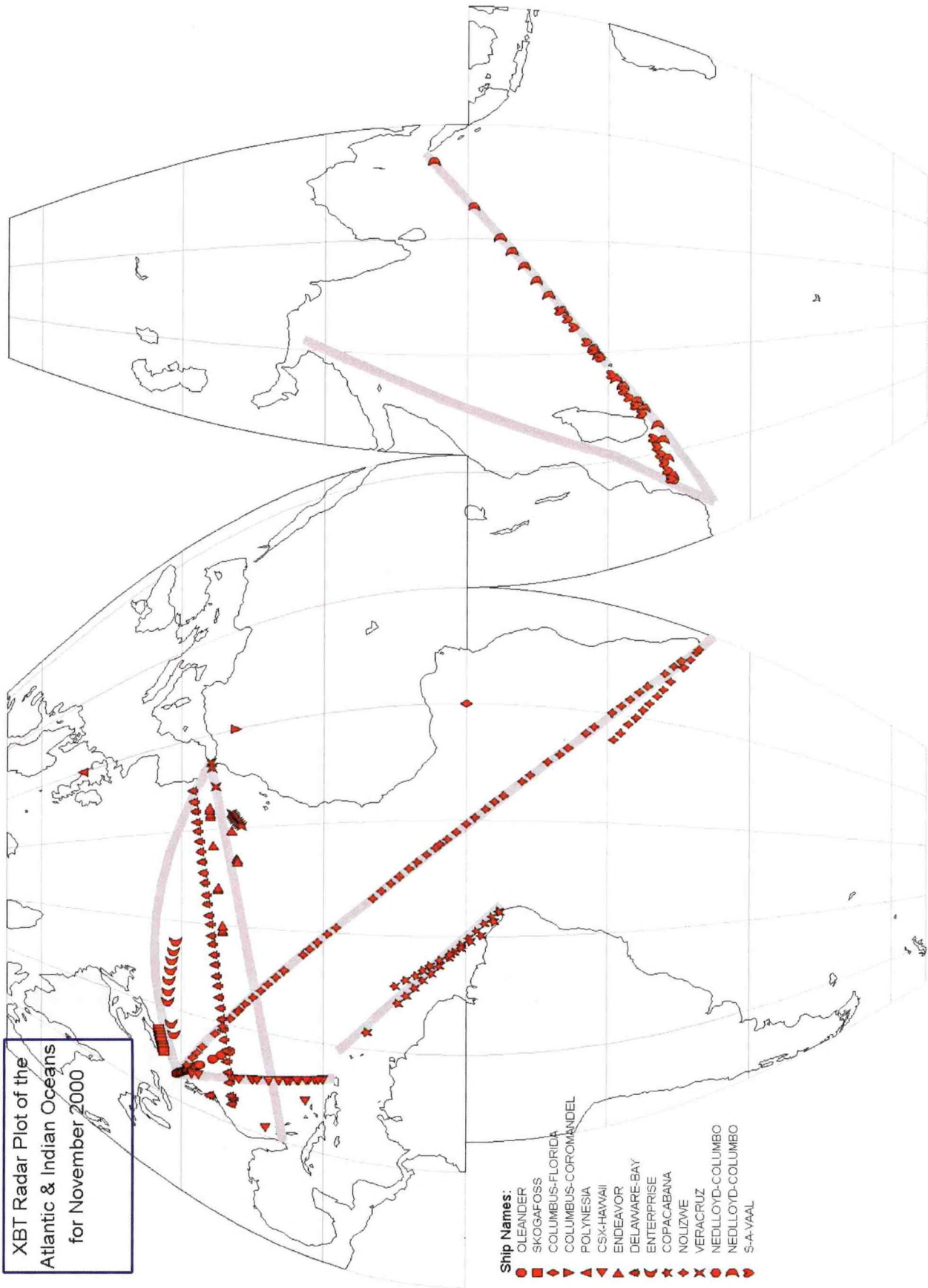




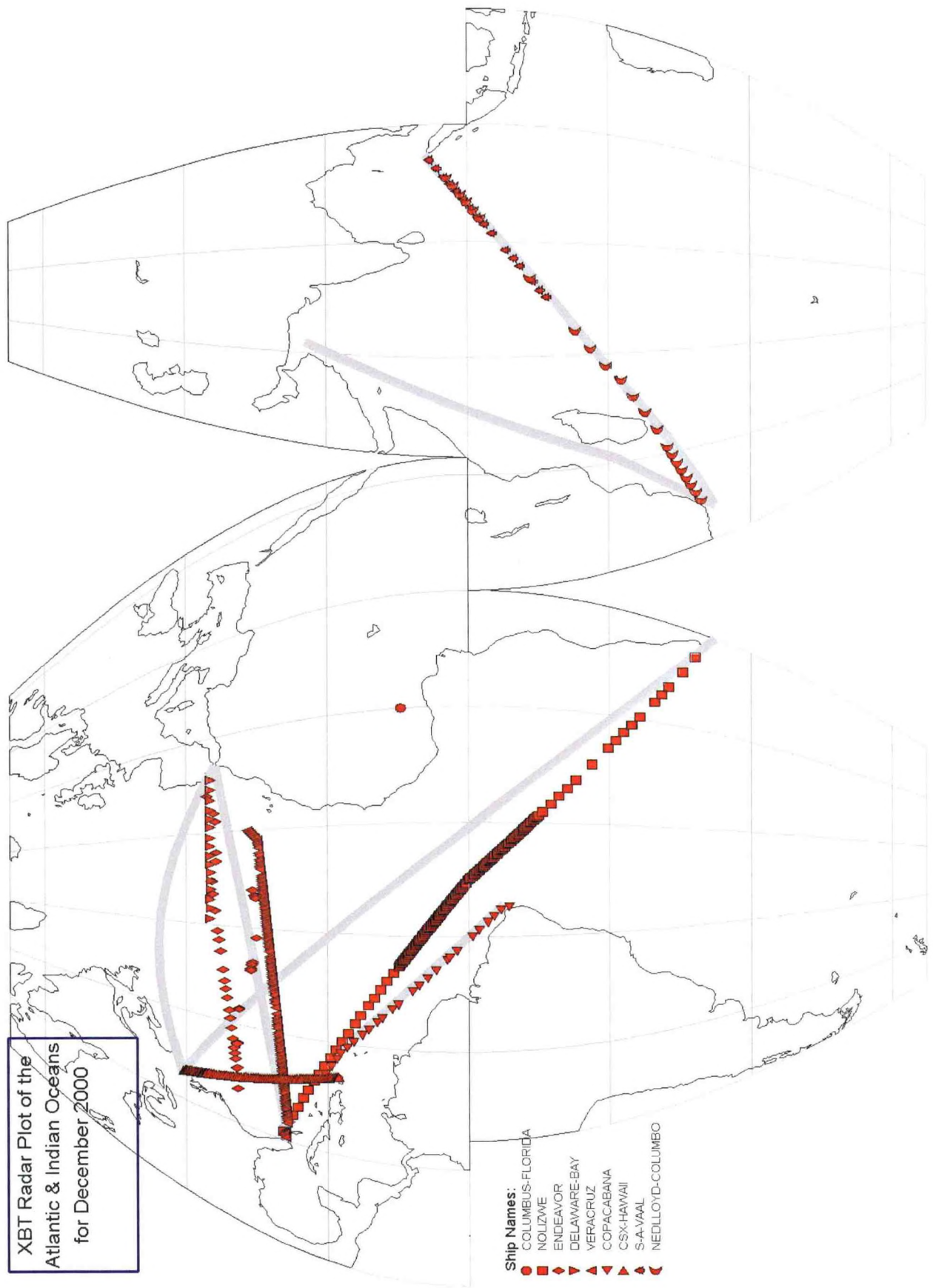
XBT Radar Plot of the
Atlantic & Indian Oceans
for October 2000

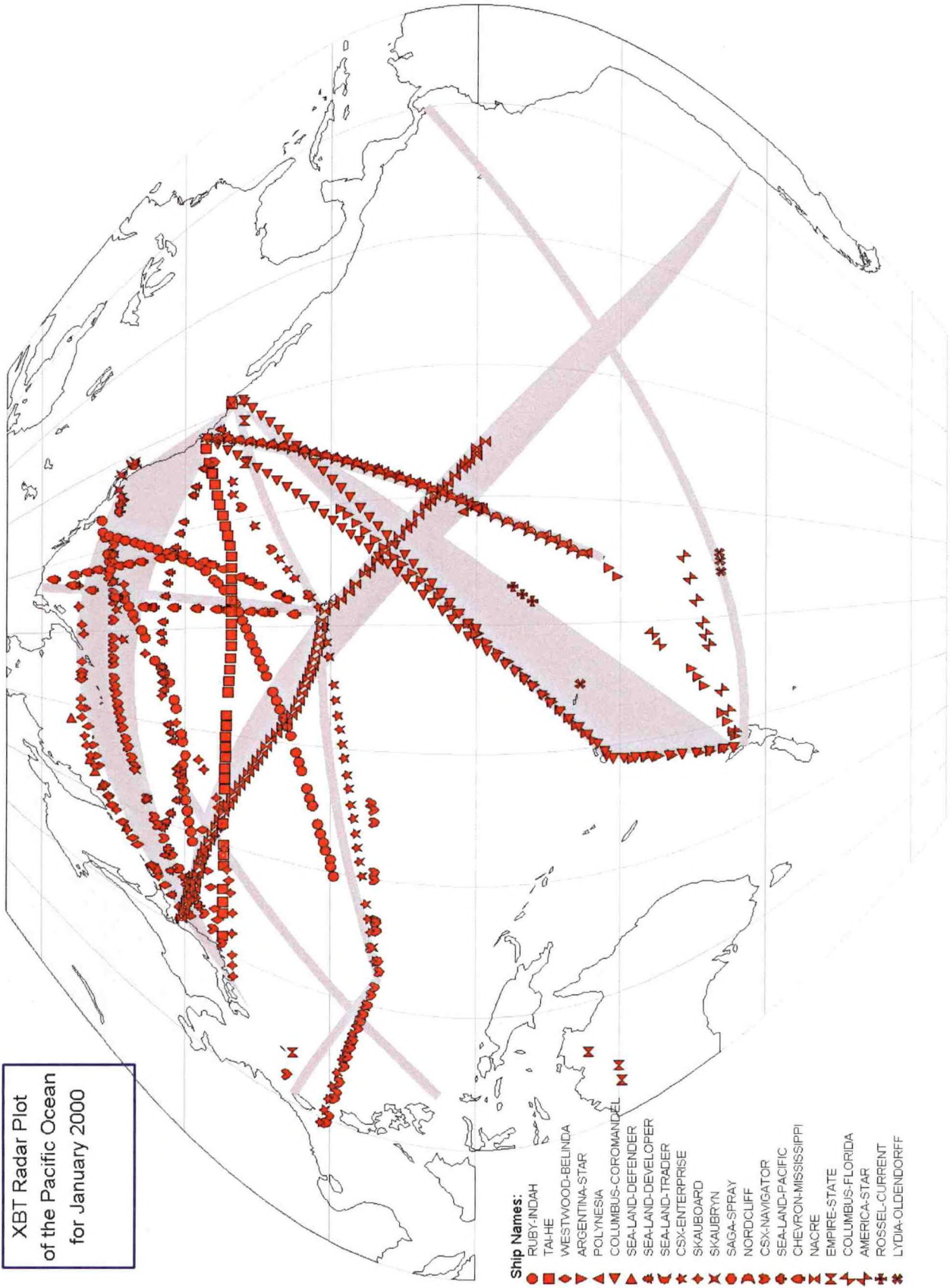


- Ship Names:
- NOLZWE
 - MORELOS
 - ◆ SKOGAFOSS
 - ▼ CSX-HAWAII
 - ▲ ENDEAVOR
 - ▲ ENTERPRISE
 - ▲ OLEANDER
 - NOMZI
 - COPACABANA
 - ★ NEDLLOYD-COLUMBO



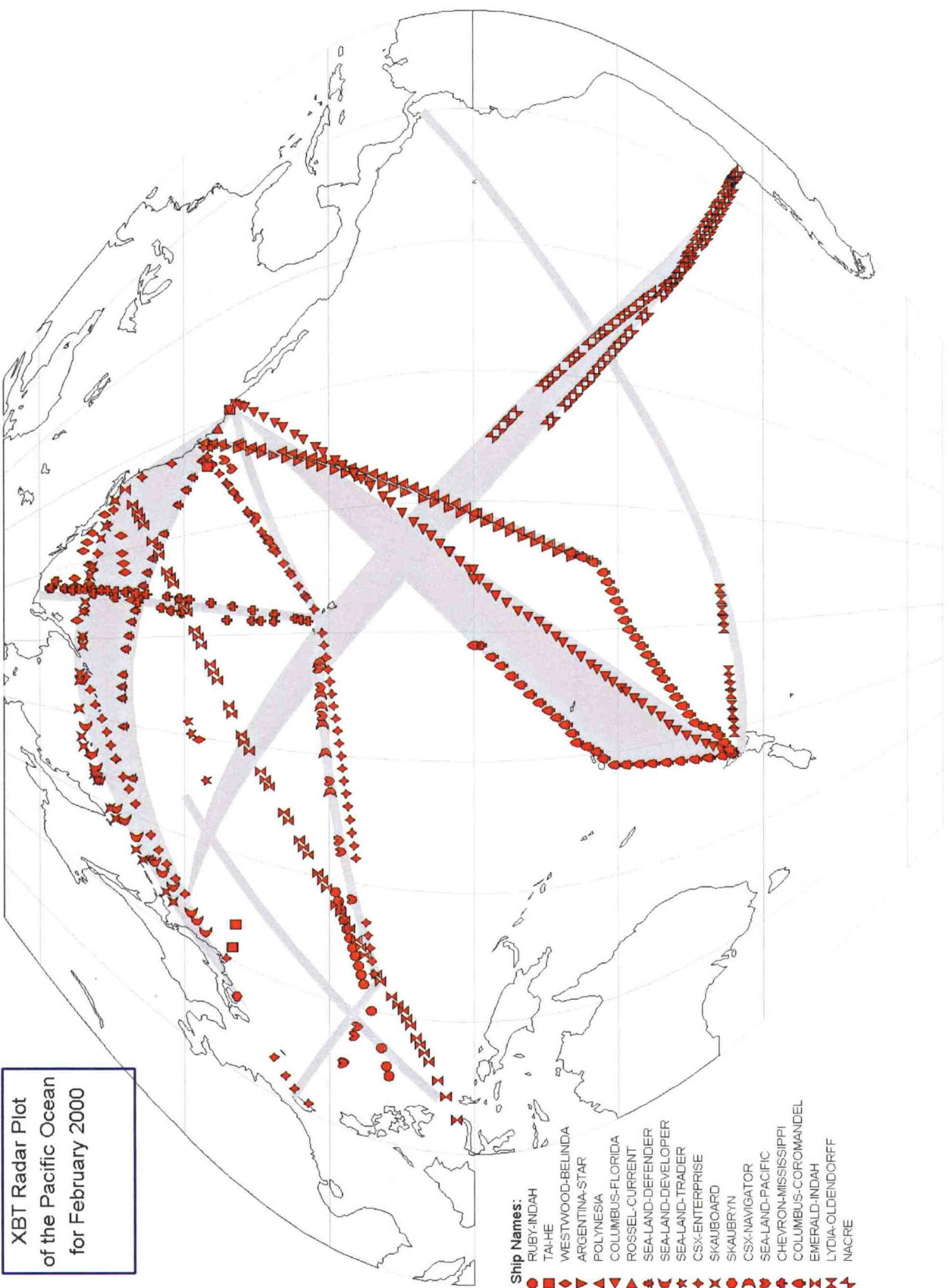
XBT Radar Plot of the
Atlantic & Indian Oceans
for December 2000





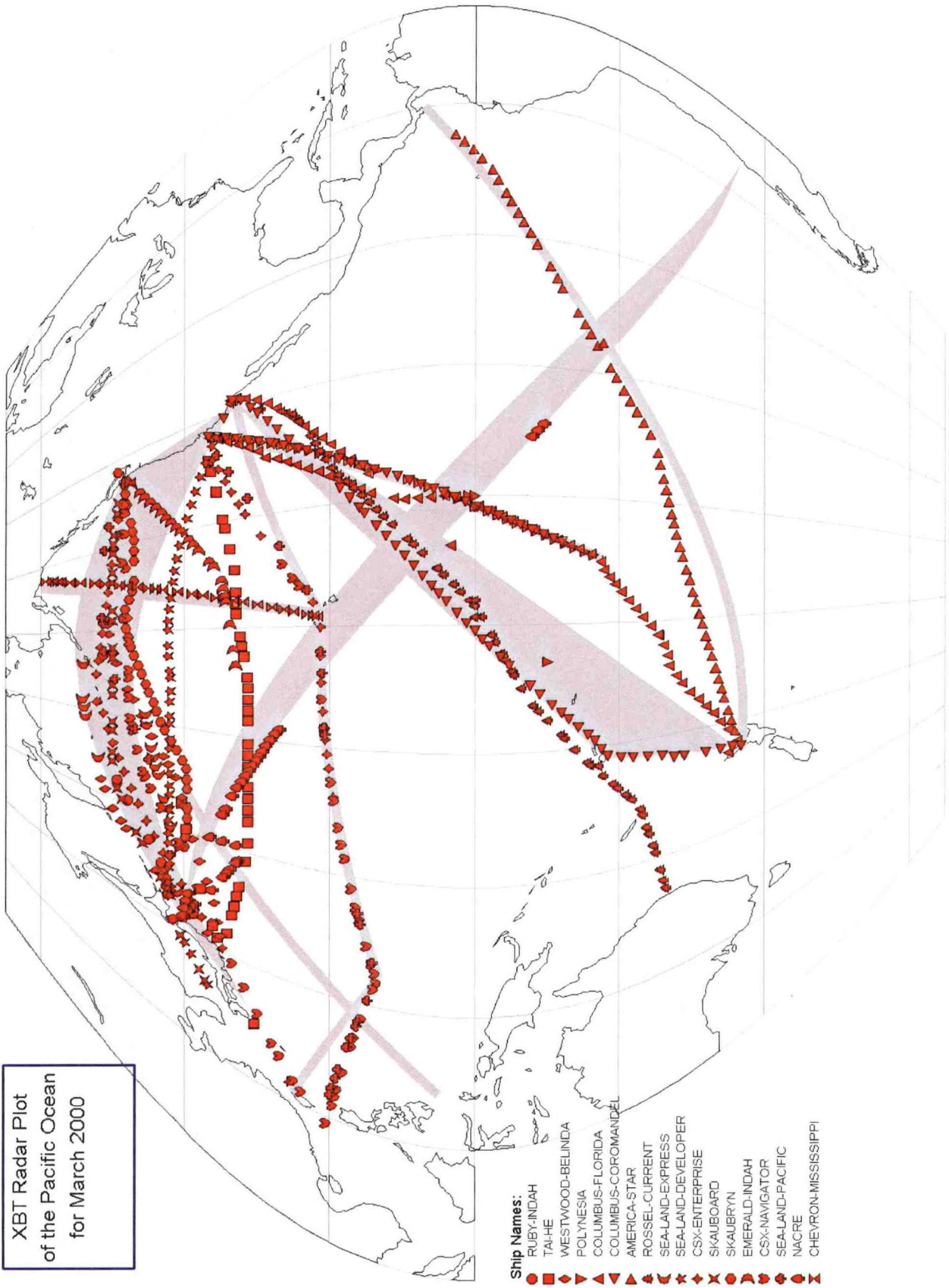
XBT Radar Plot
of the Pacific Ocean
for January 2000

- Ship Names:**
- RUBY-INDIAH
 - ◻ TAH-HE
 - ◊ WESTWOOD-BELINDA
 - ◄ ARGENTINA-STAR
 - ▲ POLYNESIA
 - ◄ COLUMBUS-COROMANDEL
 - ◄ SEA-LAND-DEFENDER
 - ◄ SEA-LAND-DEVELOPER
 - ◄ SEA-LAND-TRADER
 - ◄ CSX-ENTERPRISE
 - ◄ SKAUBOARD
 - ◄ SKAUBRYN
 - ◄ SAGA-SPRAY
 - ◄ NORDCLIFF
 - ◄ CSX-NAVIGATOR
 - ◄ SEA-LAND-PACIFIC
 - ◄ CHEVRON-MISSISSIPPI
 - ◄ NACRE
 - ◄ EMPIRE-STATE
 - ◄ COLUMBUS-FLORIDA
 - ◄ AMERICA-STAR
 - ◄ ROSSEL-CURRENT
 - ◄ LYDIA-OLDENDORFF



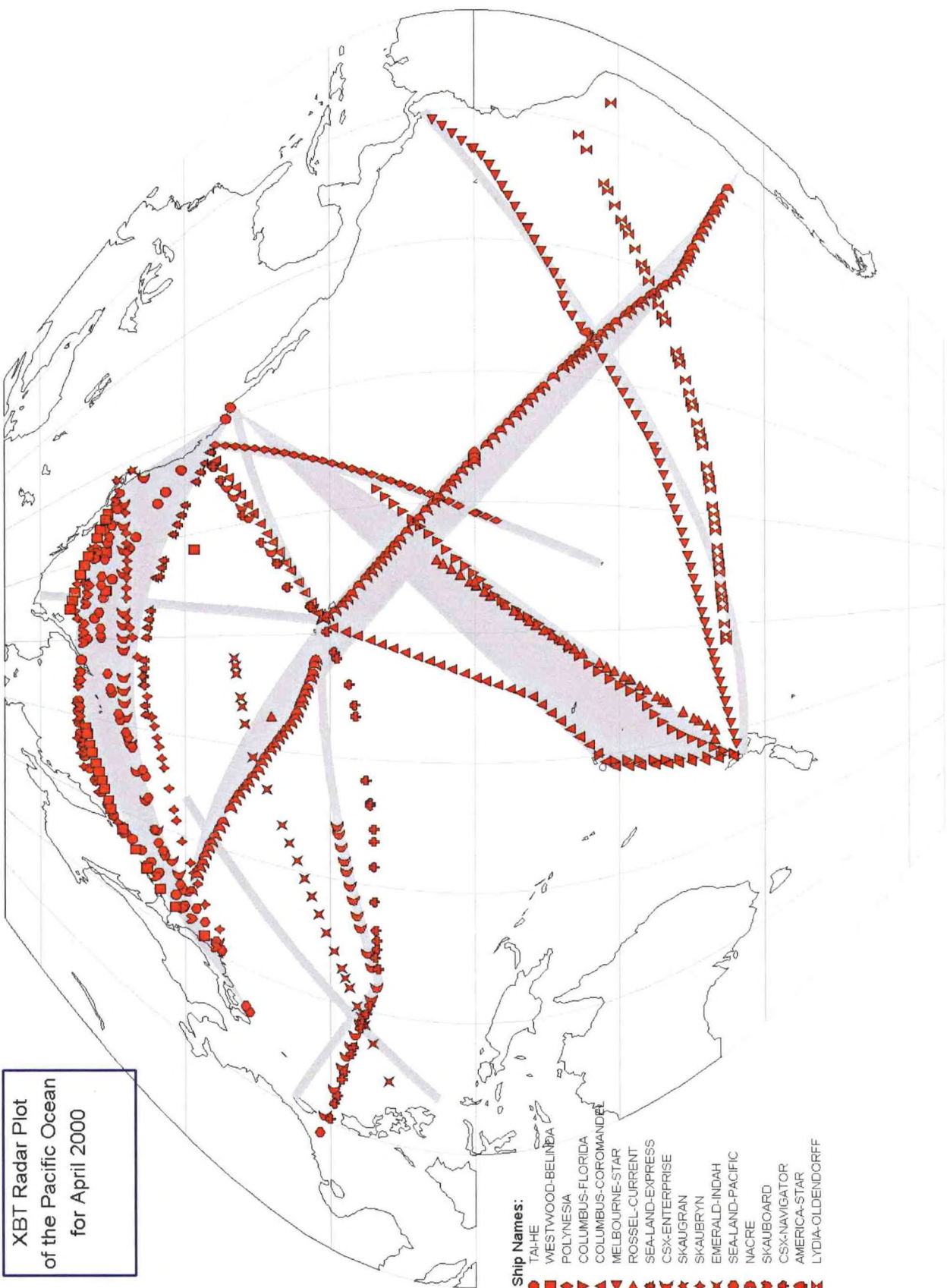
XBT Radar Plot
of the Pacific Ocean
for February 2000

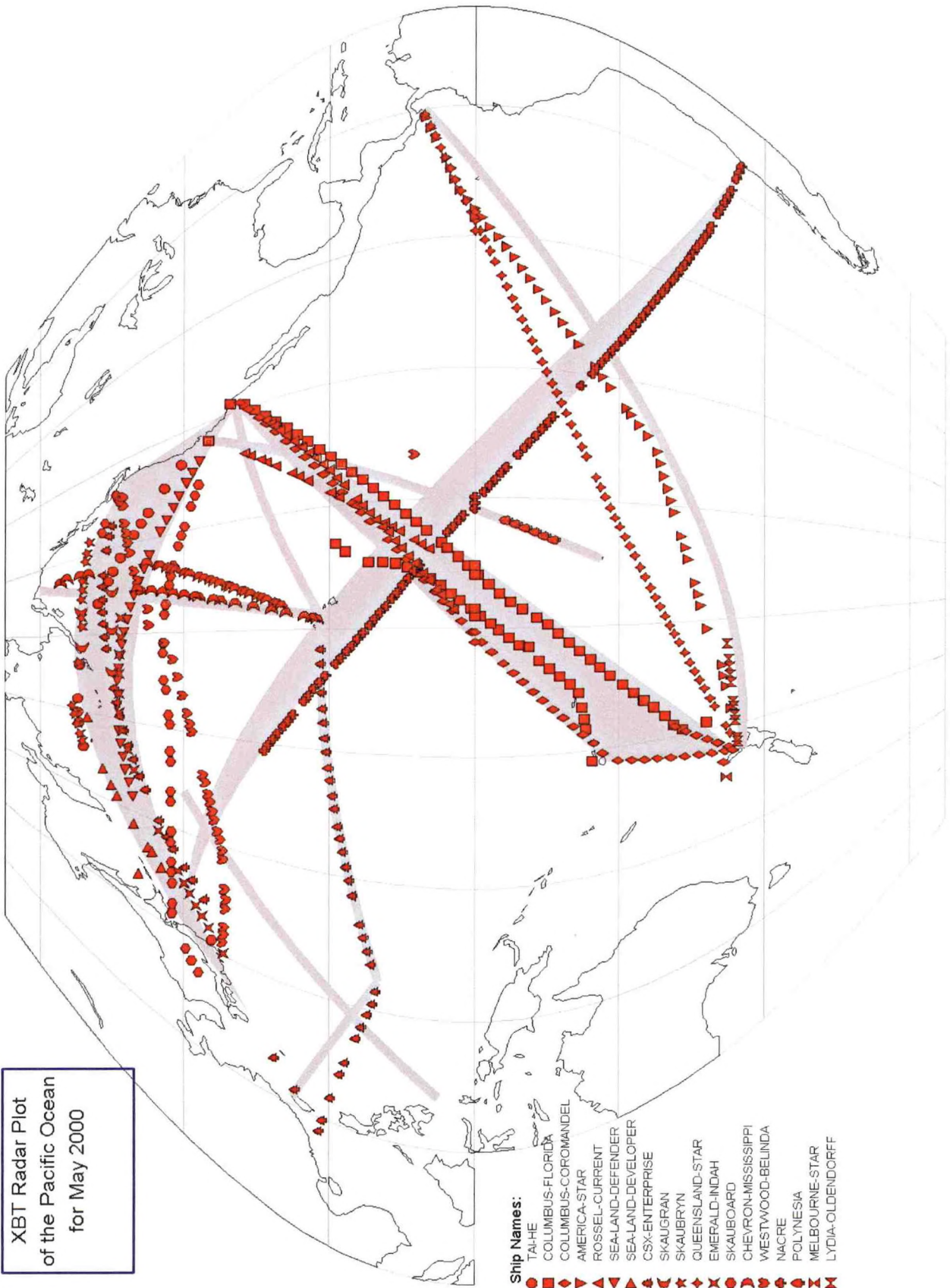
- Ship Names:**
- RUBY-INDAH
 - TAI-HE
 - WESTWOOD-BELINDA
 - ARGENTINA-STAR
 - POLYNESIA
 - COLUMBUS-FLORIDA
 - ROSSEL-CURRENT
 - SEA-LAND-DEFENDER
 - SEA-LAND-DEVELOPER
 - SEA-LAND-TRADER
 - CSX-ENTERPRISE
 - SKAUBOARD
 - SKAUBRYN
 - CSX-NAVIGATOR
 - SEA-LAND-PACIFIC
 - CHEVRON-MISSISSIPPI
 - COLUMBUS-COFOMANDEL
 - EMERALD-INDAH
 - LYDIA-OLDENDORFF
 - NACRE

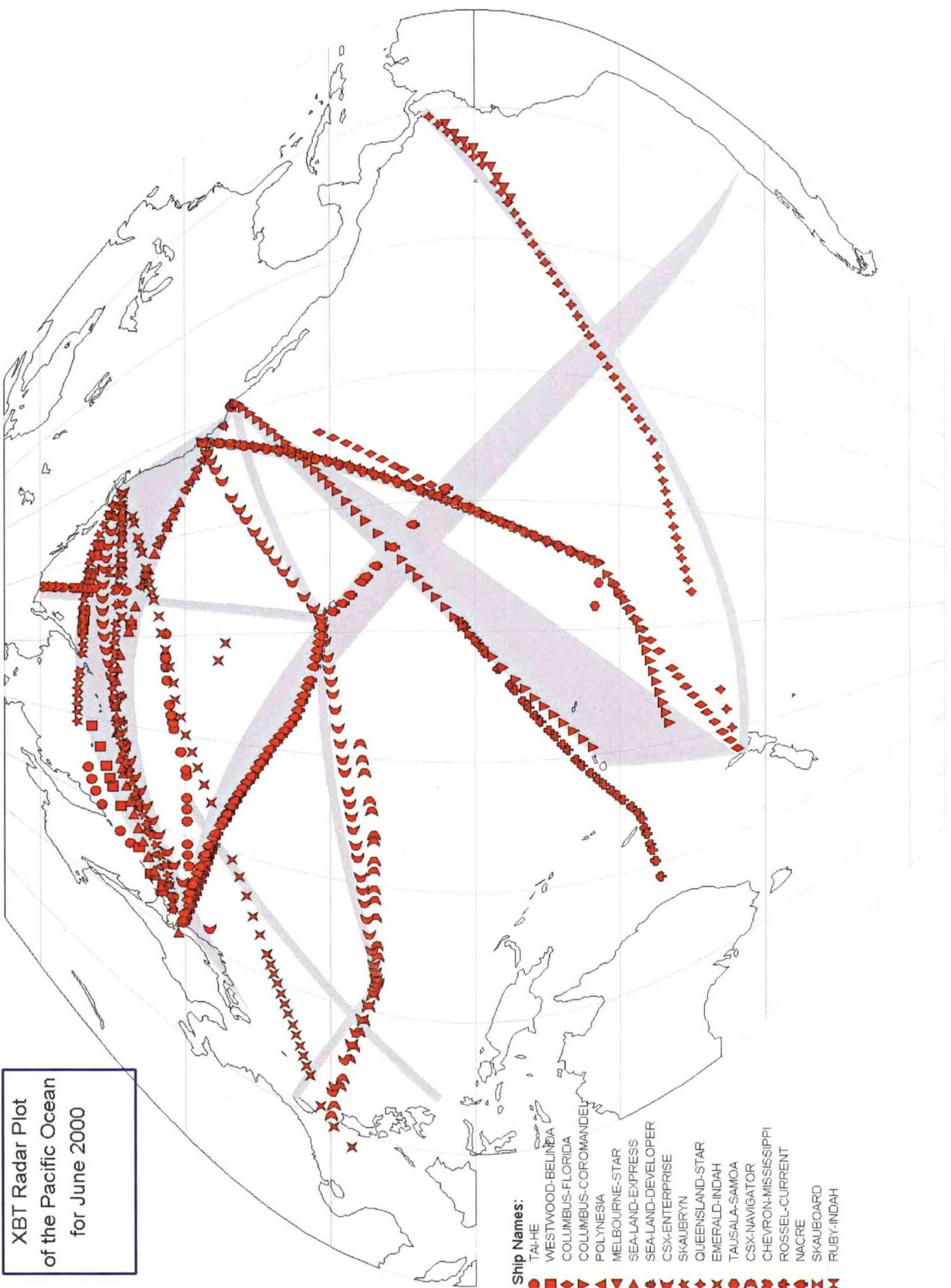


XBT Radar Plot
of the Pacific Ocean
for March 2000

- Ship Names:**
- RUBY-INDAH
 - TAH-HE
 - ◇ WESTWOOD-BELINDA
 - ▽ POLYNESIA
 - ▲ COLUMBUS-FLORIDA
 - △ COLUMBUS-COROMANDEL
 - ◆ AMERICA-STAR
 - ▲ ROSSEL-CURRENT
 - ★ SEA-LAND-EXPRESS
 - ✱ SEA-LAND-DEVELOPER
 - ✧ CSX-ENTERPRISE
 - ✕ SKAUBOARD
 - SKAUBRYN
 - ◐ EMERALD-INDAH
 - ◑ CSX-NAVIGATOR
 - ◒ SEA-LAND-PACIFIC
 - ◓ NACRE
 - ✂ CHEVRON-MISSISSIPPI

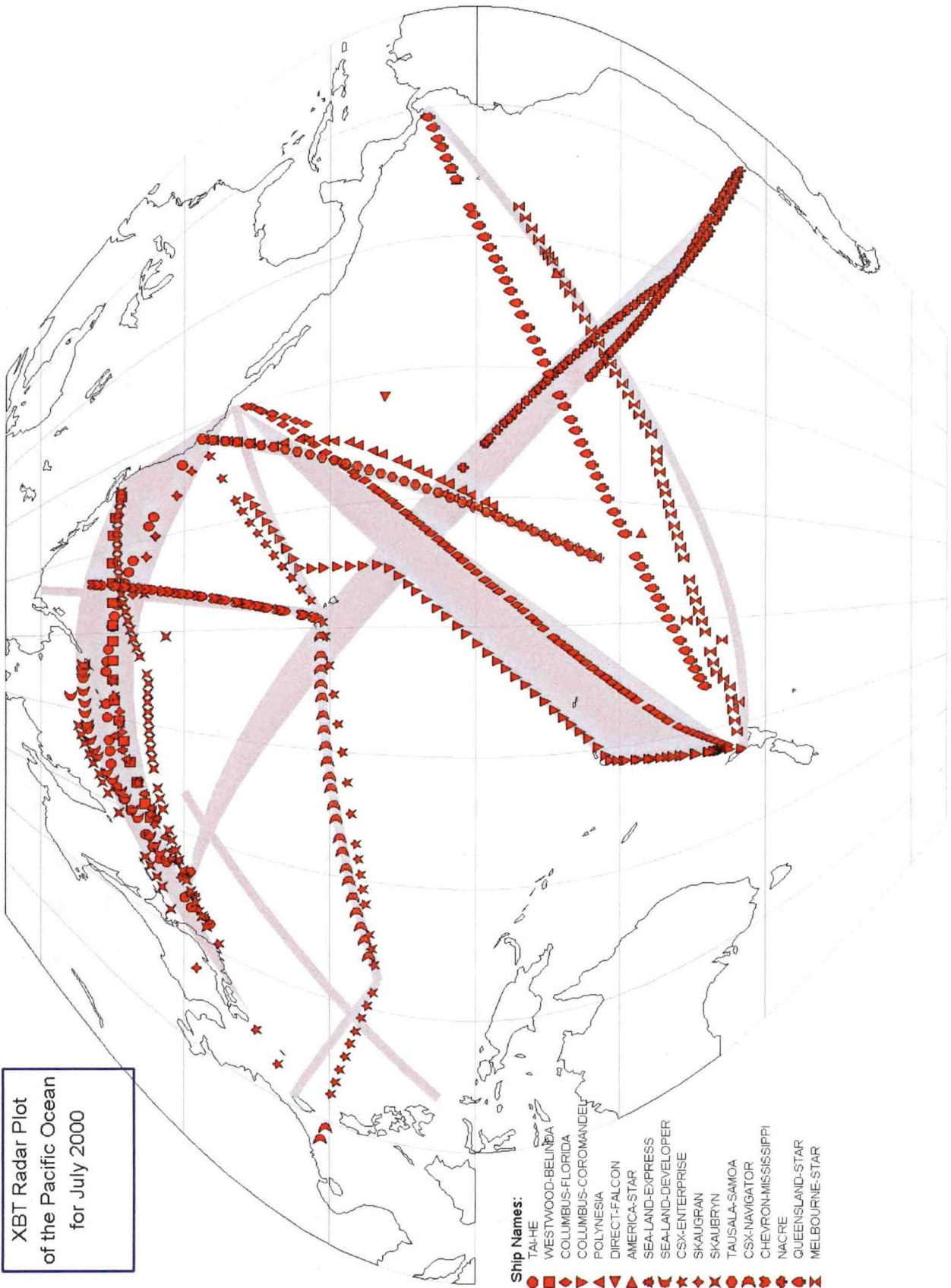




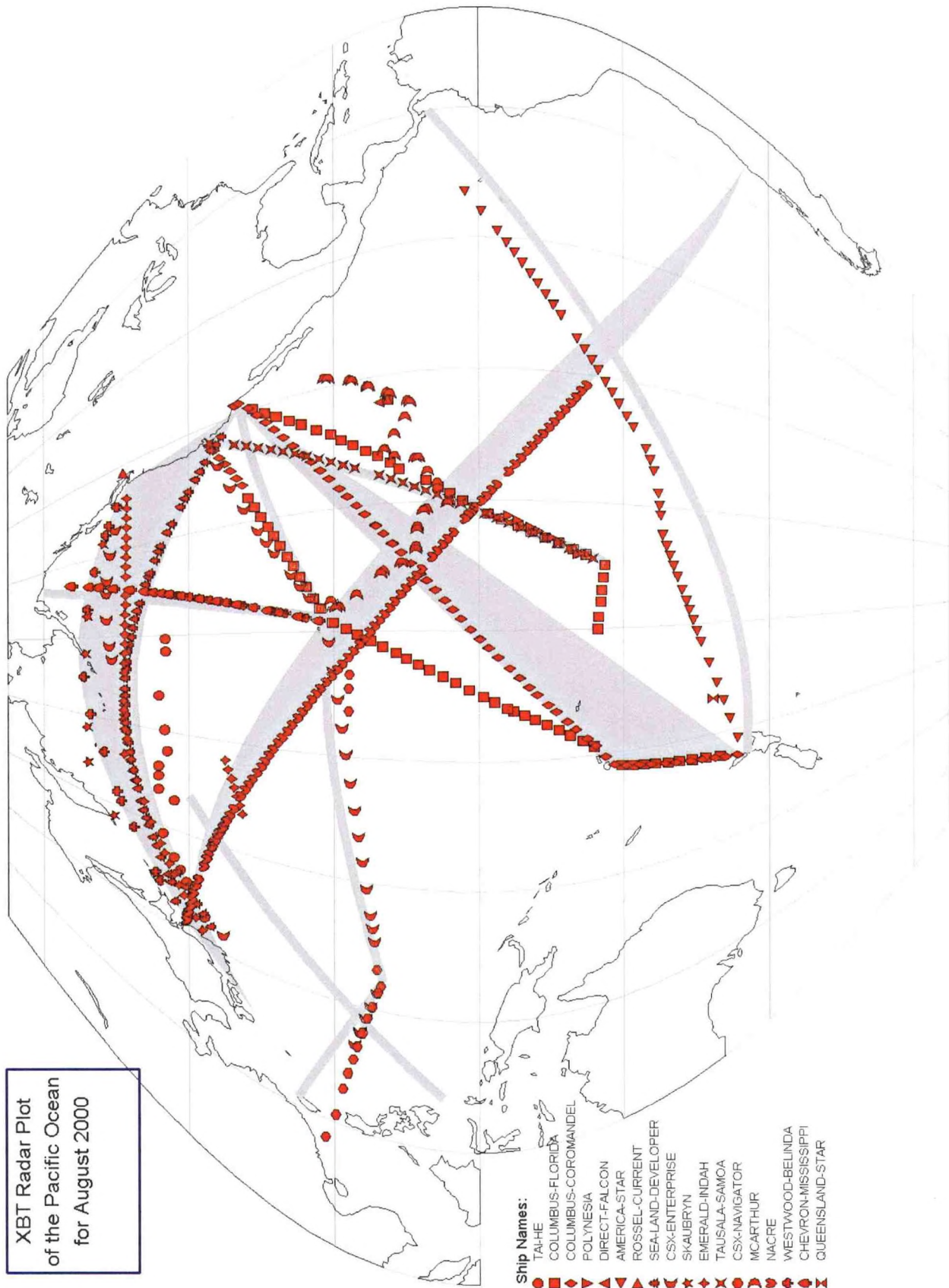


XBT Radar Plot
of the Pacific Ocean
for June 2000

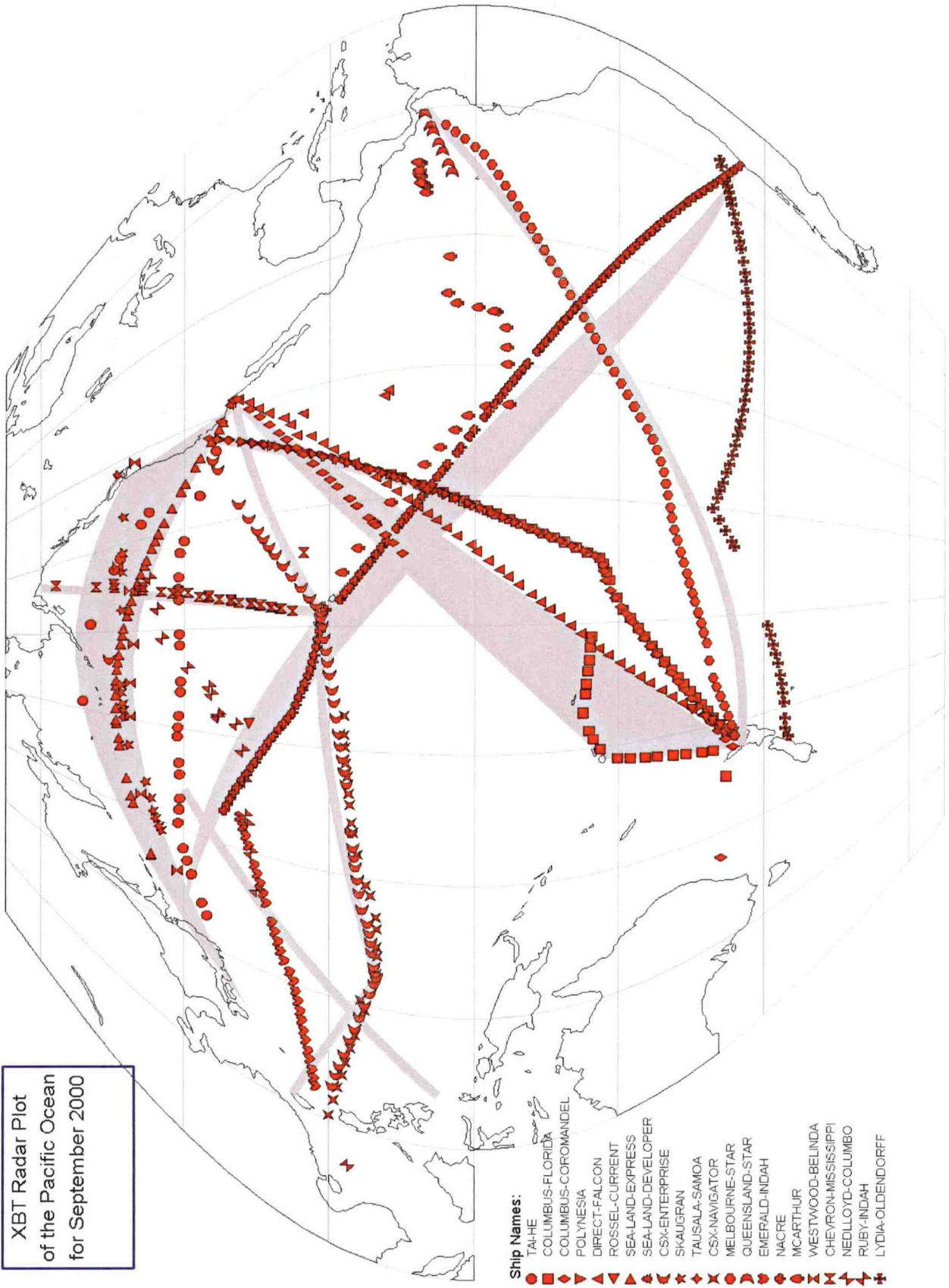
- Ship Names:
- TALHE
 - WESTWOOD-BELINDA
 - ◆ COLUMBUS-FLORIDA
 - ▼ COLUMBUS-COFOMANDEL
 - ▲ POLYNESIA
 - ▲ MELBOURNE-STAR
 - ▲ SEA-LAND-EXPRESS
 - ▲ SEA-LAND-DEVELOPER
 - ▲ CSX-ENTERPRISE
 - ▲ SKAUBRYN
 - ▲ QUEENSLAND-STAR
 - ▲ EMERALD-INDAH
 - ▲ TAUSALA-SAMOA
 - ▲ CSX-NAVIGATOR
 - ▲ CHEVRON-MISSISSIPPI
 - ▲ ROSSEL-CURRENT
 - ▲ NACRE
 - ▲ SKAUBOARD
 - ▲ RUBY-INDAH



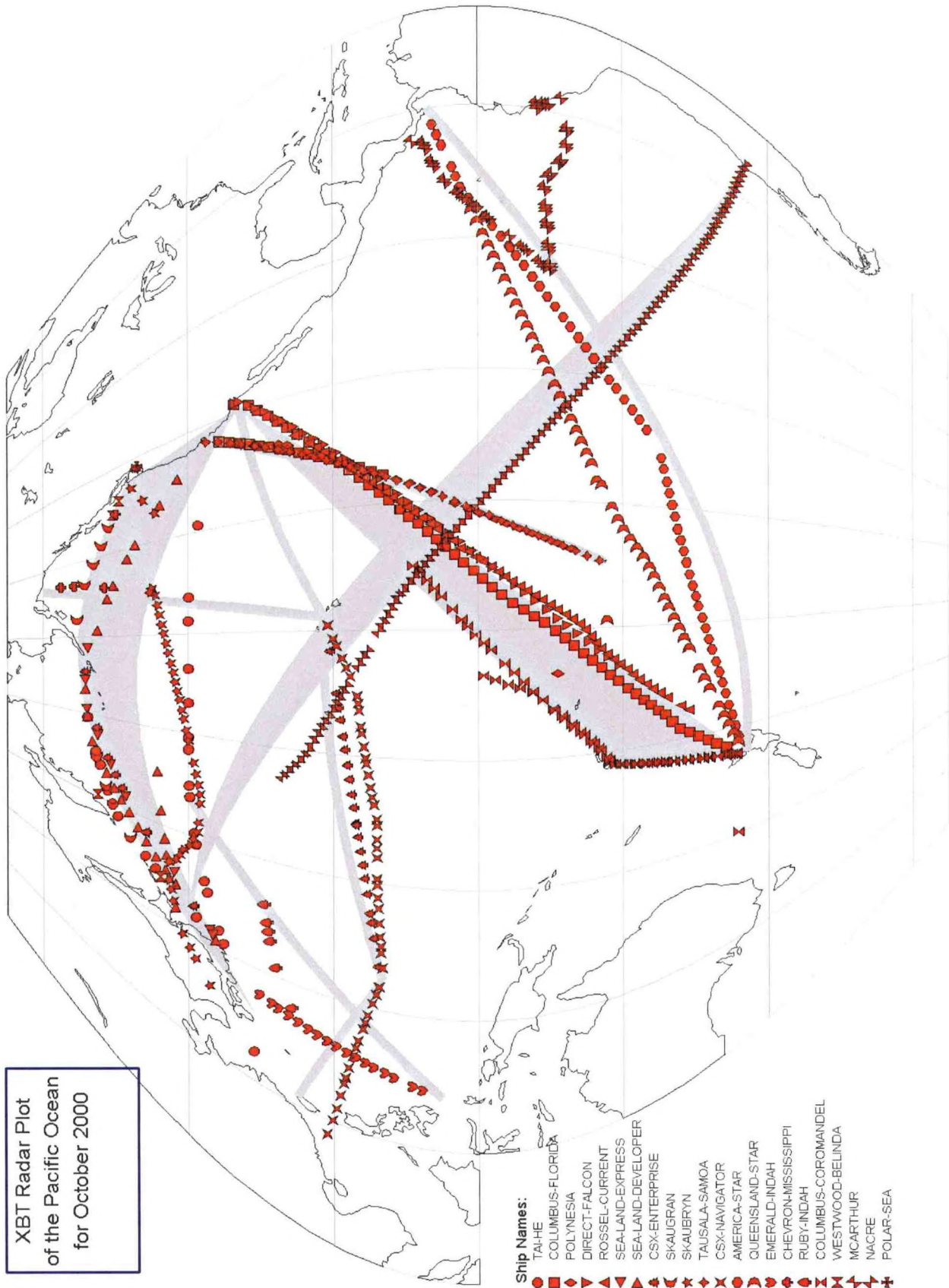
XBT Radar Plot
of the Pacific Ocean
for August 2000

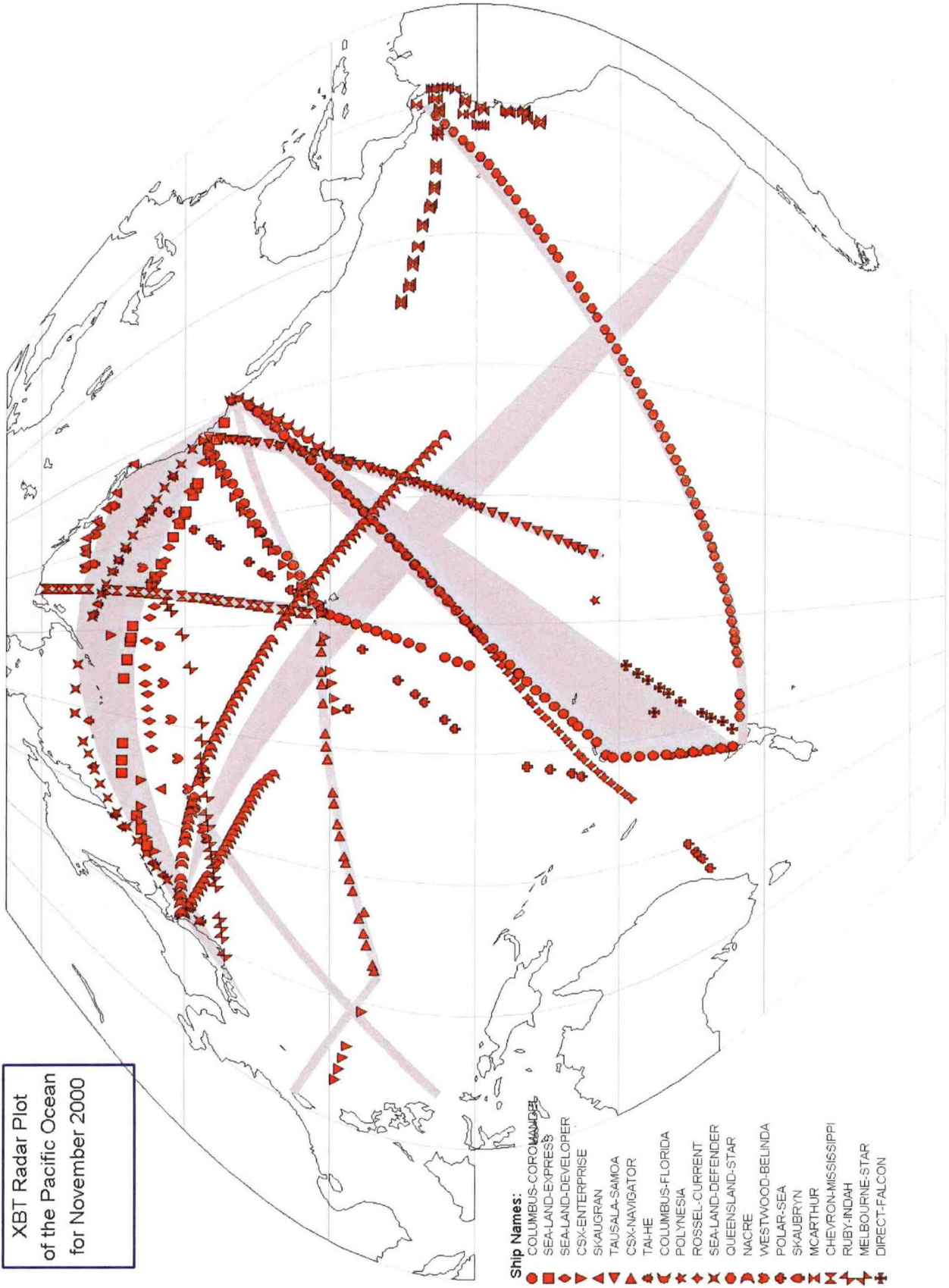


- Ship Names:
- TAIHE
 - COLUMBUS-FLORIDA
 - ◆ COLUMBUS-COROMANDEL
 - ▼ POLYNESIA
 - ▲ DIRECT-FALCON
 - ▲ AMERICA-STAR
 - ▲ ROSSEL-CURRENT
 - ▲ SEA-LAND-DEVELOPER
 - ▲ CSX-ENTERPRISE
 - ▲ SKAUBRYN
 - ▲ EMERALD-INDAH
 - ▲ TAUSALA-SAMOA
 - ▲ CSX-NAVIGATOR
 - ▲ MCARTHUR
 - ▲ NACRE
 - ▲ WESTWOOD-BELINDA
 - ▲ CHEYRON-MISSISSIPPI
 - ▲ QUEENSLAND-STAR



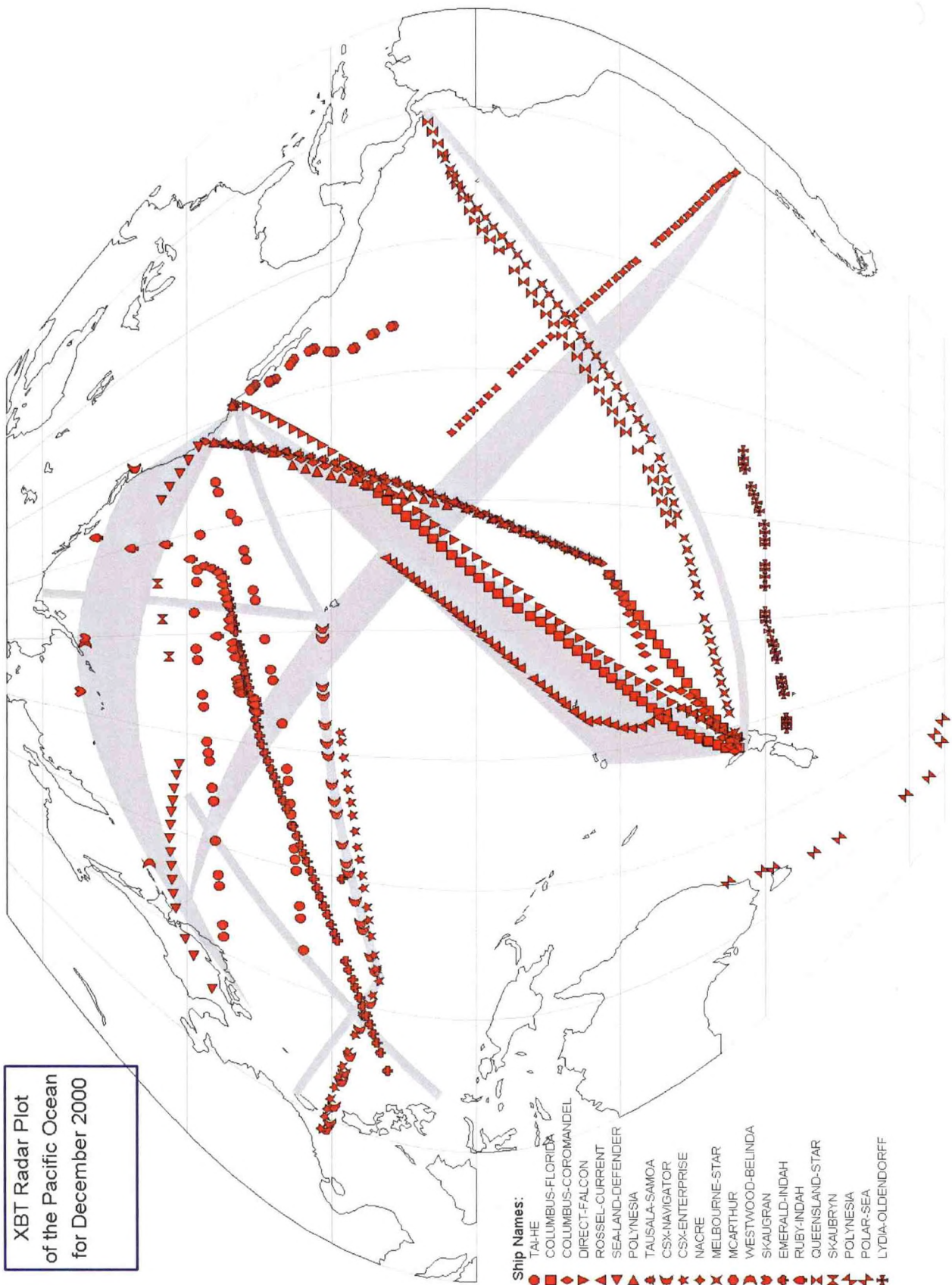
XBT Radar Plot
of the Pacific Ocean
for October 2000





XBT Radar Plot
of the Pacific Ocean
for November 2000

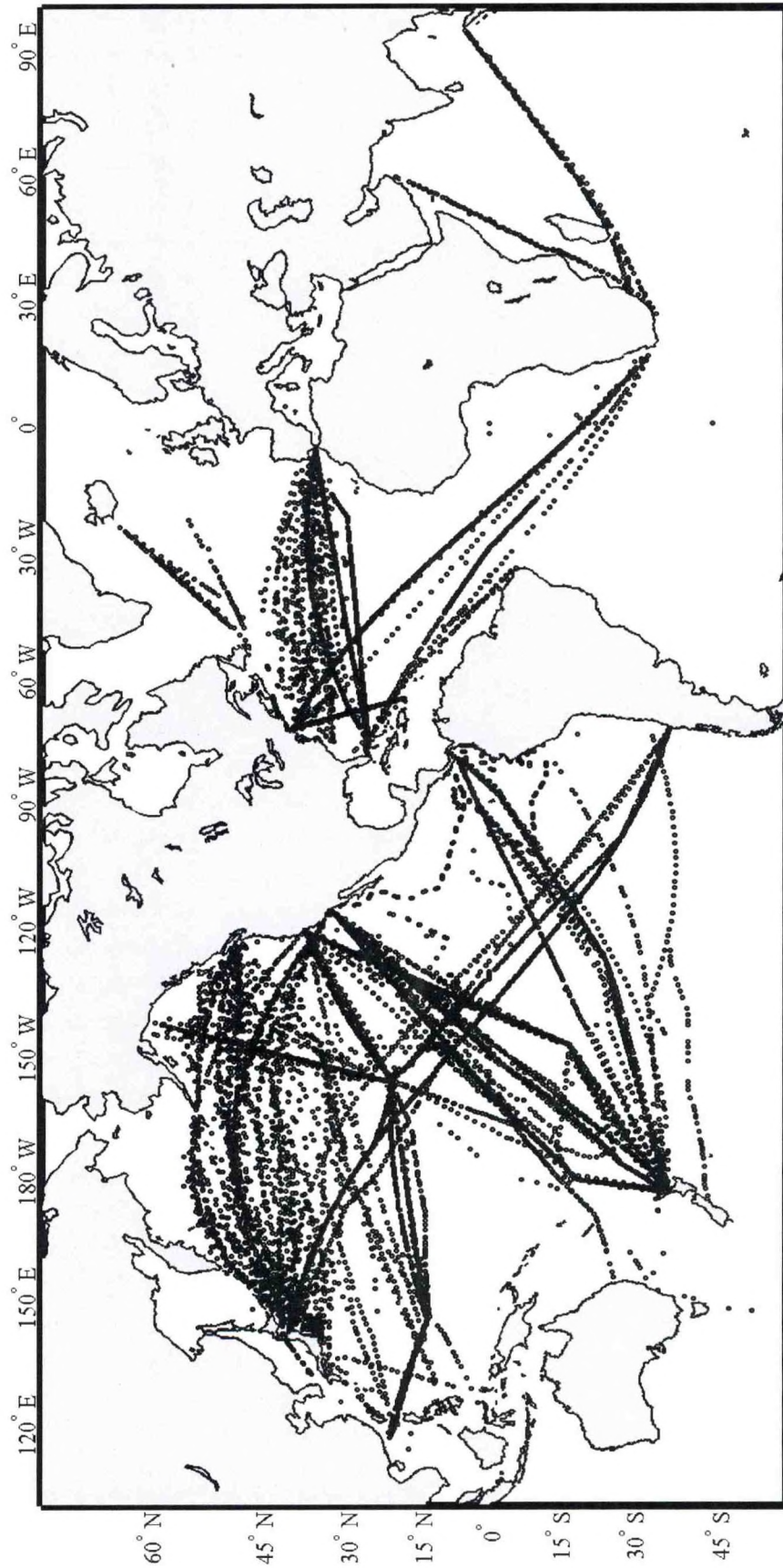
- Ship Names:**
- COLUMBUS-COROMANDEL
 - SEA-LAND-EXPRESS
 - ◇ SEA-LAND-DEVELOPER
 - ▽ CSX-ENTERPRISE
 - ▲ SKAUGRAN
 - △ TAUSALA-SAMOA
 - ◀ CSX-NAVIGATOR
 - TAHITI
 - COLUMBUS-FLORIDA
 - ◐ POLYNESIA
 - ✕ ROSSEL-CURRENT
 - ✖ SEA-LAND-DEFENDER
 - QUEENSLAND-STAR
 - NACRE
 - WESTWOOD-BELINDA
 - POLAR-SEA
 - SKAUBRYN
 - MCARTHUR
 - CHEVRON-MISSISSIPPI
 - RUBY-INDAH
 - MELBOURNE-STAR
 - DIRECT-FALCON



Data Collection

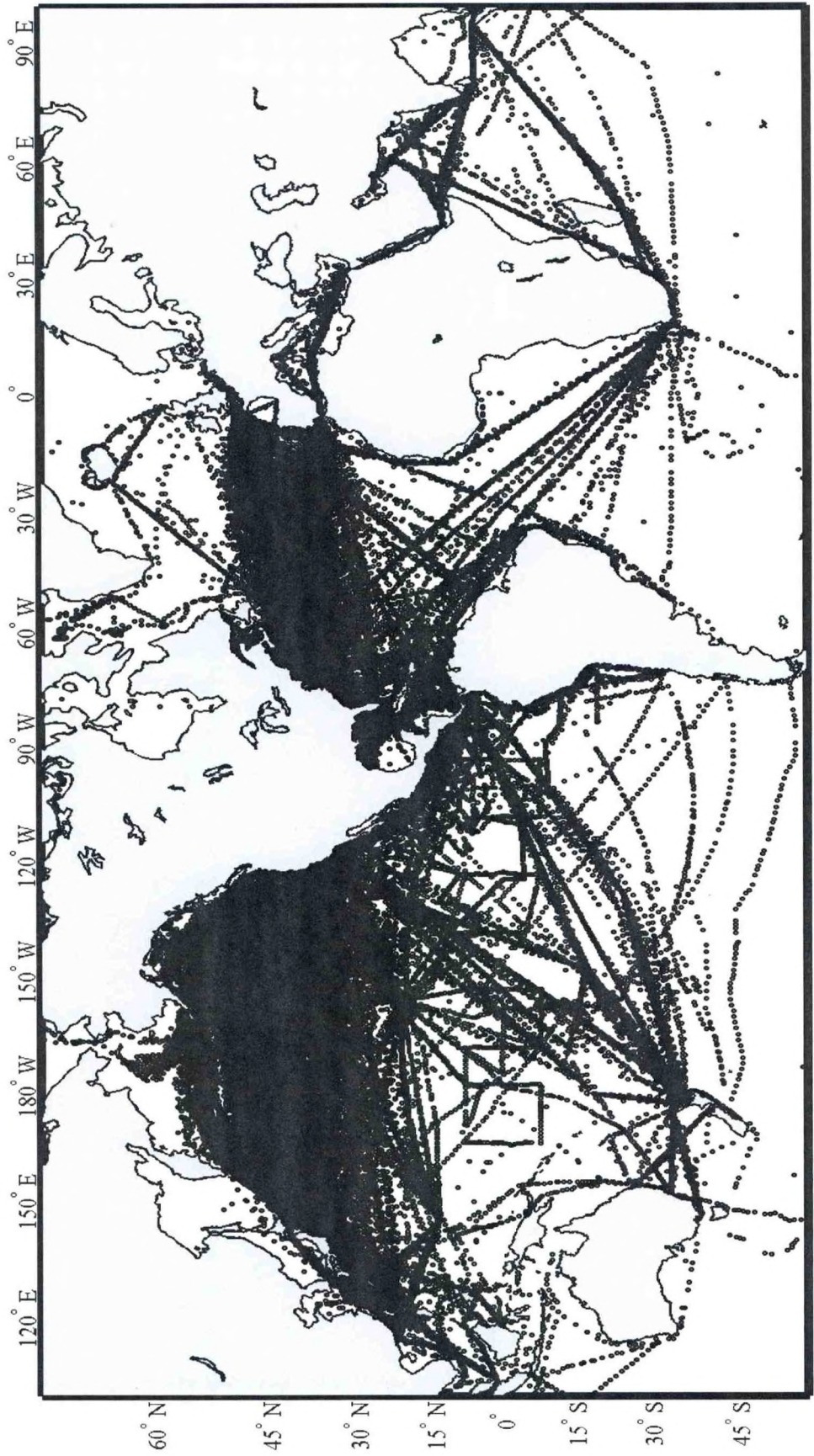
“Dot” plot of all XBT observations collected via SEAS during the year 2000

Total number of XBT observations = 11,569

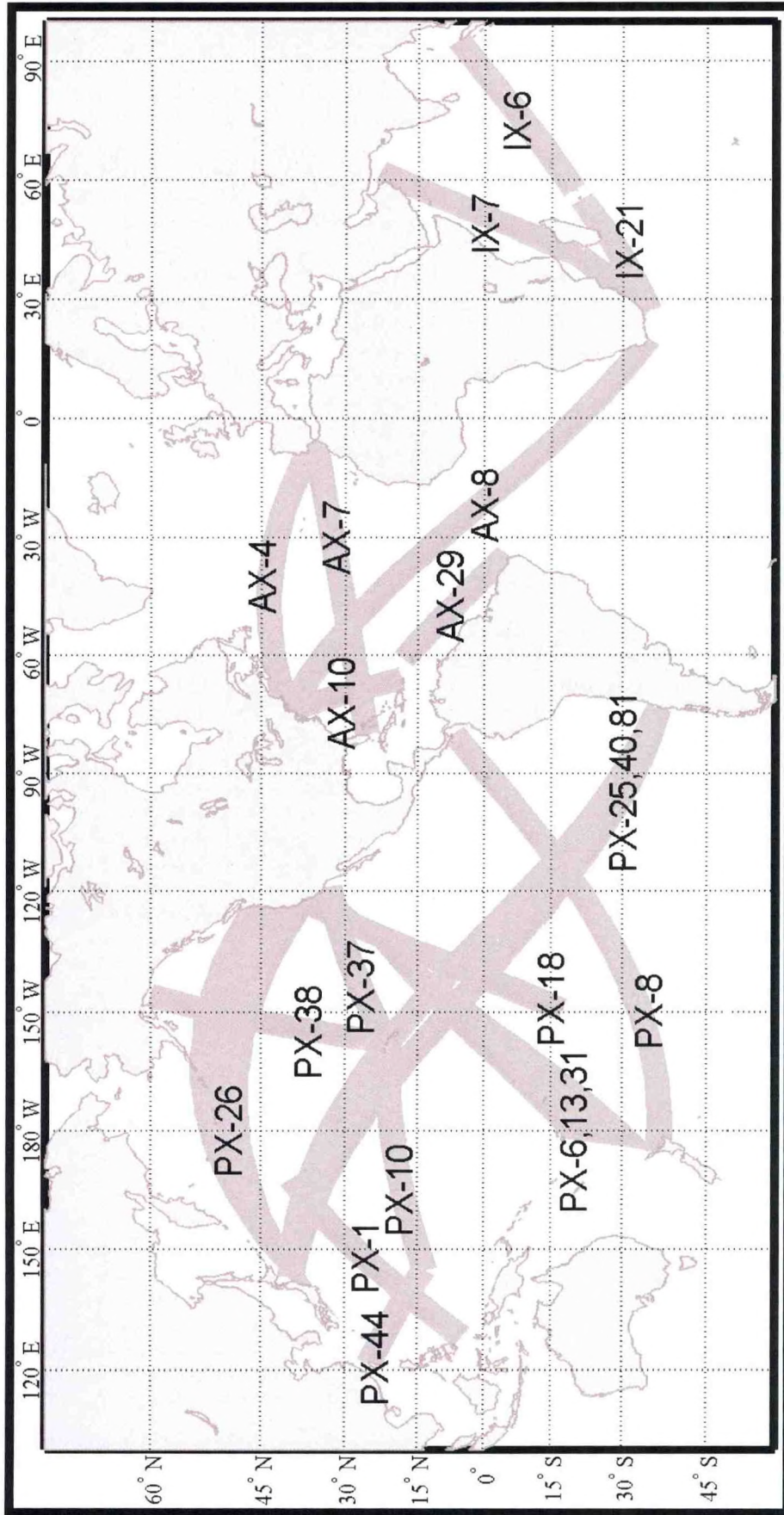


‘Dot’ plot of all Meteorological observations collected via SEAS during the year 2000

Total number of SEAS Meteorological observations = 107,030



Principal GOOS XBT Routes during 2000



Only principal XBT routes are shown in this schematic. Routes listed on the following pages that are not shown here are not principal routes.

SEAS XBT Counts by route for the year 2000

(as of February 14, 2001)

The Chart below is a list showing the XBT routes and the number of XBTs collected by each VOS ship for each month during the year 2000. The number per year indicates the required number of XBTs that should be collected per year as mandated by the SOOPIP. The number per month indicates the required number of XBTs that should be collected per month per ship. The monthly totals indicate the actual number of XBTs collected per month.

ATLANTIC OCEAN

ROUTE A02	NEWFOUNDLAND to ICELAND												#/YEAR = 200	#/MON = 17
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
HANSEWEALL	16	31	7	0	0	0	0	0	0	0	0	0	54	
SELFOSS	28	0	0	17	0	31	0	0	0	0	0	0	76	

ROUTE TOTAL	44	31	7	17	0	31	0	0	0	0	0	0	130	
ROUTE A04	NEW YORK to GIBRALTAR/LISBON												#/YEAR = 440	#/MON = 37
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
DELAWARE BAY	0	0	0	0	0	0	0	0	0	0	27	16	43	
ENDEAVOR	0	3	16	20	26	29	9	15	16	27	14	31	206	
ENDURANCE	5	2	4	0	0	0	0	0	0	0	0	0	11	
ENTERPRISE	4	28	24	28	19	0	25	33	27	18	9	1	216	

ROUTE TOTAL	9	33	44	48	45	29	34	48	43	45	50	48	476	
ROUTE A07	GULF OF MEXICO to GIBRALTAR												#/YEAR = 520	#/MON = 43
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
MORELOS	29	27	0	28	0	7	31	188	0	34	0	0	344	

ROUTE TOTAL	29	27	0	28	0	7	31	188	0	34	0	0	344	

ROUTE A08		NEW YORK to CAPE OF GOOD HOPE #/YEAR = 960 #/MON = 80											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NOLIZWE	43	14	49	0	57	50	6	56	11	83	65	144	578
NOMZI	84	17	0	13	43	6	50	25	12	12	0	0	262
ROUTE TOTAL	127	31	49	13	100	56	56	81	23	95	65	144	840

ROUTE A10		NEW YORK to TRINIDAD/CARACAS #/YEAR = 200 #/MON 17											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CSX CRUSADER	21	0	16	0	0	0	0	0	0	0	0	0	37
CSX HAWAII	0	0	0	0	8	17	4	16	11	23	20	7	106
DELAWARE BAY	0	0	0	0	0	0	0	0	0	0	0	21	21
ROUTE TOTAL	21	0	16	0	8	17	4	16	11	23	20	28	164

ROUTE A29		NEW YORK to BRAZIL #/YEAR = 360 #/MON = 30											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COPACABANA	0	0	0	0	0	0	0	0	0	0	15	0	15
ROUTE TOTAL	0	0	0	0	0	0	0	0	0	0	15	0	15

ROUTE A32		NEW YORK to BERMUDA #/YEAR = 120 #/MON = 10											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
OLEANDER	0	0	0	0	0	24	21	24	0	26	2	0	97
ROUTE TOTAL	0	0	0	0	0	24	21	24	0	26	2	0	97

ROUTE A33		BOSTON to HALIFAX/NOVA SCOTIA #/YEAR = 120 #/MON = 10											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
HANSEWALL	1	0	0	0	0	0	0	0	0	0	0	0	1
SELFOSS	9	1	10	9	7	0	4	0	0	0	0	0	40
SKOGAFOSS	0	0	0	0	0	0	0	0	0	6	0	0	6
ROUTE TOTAL	10	1	10	9	7	0	4	0	0	6	0	0	47

OFF ROUTE SAMPLING

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AMERICA STAR	0	11	0	0	0	0	0	0	0	0	0	0	11
CHEVRON MISSISSIPPI	0	0	1	0	0	0	0	0	0	1	0	0	2
COLUMBUS COROMA	0	0	0	0	0	0	0	0	0	1	0	0	1
COPACABANA	0	0	0	0	0	0	0	0	0	1	0	0	1
DIRECT FALCON	0	0	0	0	0	0	2	2	3	0	0	0	7
HANSEWALL	2	0	0	0	0	0	0	0	0	0	0	0	2
MCARTHUR	0	0	0	0	0	0	0	35	29	58	63	25	210
MELBOURNE STAR	0	0	0	1	0	0	0	0	0	0	0	0	1
POLAR SEA	0	0	0	0	0	0	0	0	0	0	0	11	11
POLYNESIA	0	0	0	0	0	0	0	1	0	0	0	0	1
ROSSEL CURRENT	1	1	0	0	0	0	0	2	0	0	0	0	4
SAGA SPRAY	0	0	0	0	2	0	0	0	0	0	0	0	2
SELFOSS	0	0	0	0	0	1	0	0	0	0	0	0	1
SKOGAFOSS	0	0	0	0	0	0	0	0	1	0	0	0	1
TAUSALA SAMOA	0	0	0	0	0	2	0	0	0	0	0	0	2

ROUTE TOTAL	3	12	1	1	2	3	2	40	33	61	63	36	257

INDIAN OCEAN

ROUTE I06 MAUR./LA REUNION to MALACCA STRAIT #/YEAR = 340 #/MON 28

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
P&O NEDLLOYD CO	0	0	0	0	0	0	0	6	25	9	10	11	61
S. A. VAAL	15	1	4	0	0	0	18	9	22	0	6	16	91

ROUTE TOTAL	15	1	4	0	0	0	18	15	47	9	16	27	152

ROUTE I07 CAPE OF GOOD HOPE to PERSIAN GULF #/YEAR = 480 #/MON = 40

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
KAZIMAH	23	0	46	0	47	0	0	0	0	0	0	0	116

ROUTE TOTAL	23	0	46	0	47	0	0	0	0	0	0	0	116

ROUTE I21 CAPE OF GOOD HOPE to MAURITIUS #/YEAR = 300 #/MON = 25

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
P&O NEDLLOYD CO	0	0	0	0	0	0	0	3	3	0	9	13	28
S. A. ORANJE	0	0	4	0	0	0	0	0	0	0	0	0	4
S. A. VAAL	6	0	7	0	0	0	12	0	19	0	11	0	55
ROUTE TOTAL	6	0	11	0	0	0	12	3	22	0	20	13	87

ROUTE I28 DUMONT d'URVILLE to TASMANIA #/YEAR = 180 #/MON = 15

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
POLAR SEA	0	0	0	0	0	0	0	0	0	0	0	11	11
ROUTE TOTAL	0	0	0	0	0	0	0	0	0	0	0	11	11

PACIFIC OCEAN

ROUTE P01 SEATTLE/VANCOUVER to INDONESIA #/YEAR = 860 #/MON = 72

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
EMERALD INDAH	0	59	23	26	0	46	0	0	0	0	0	55	209
RUBY INDAH	49	16	0	0	0	0	0	0	16	6	0	40	127
ROUTE TOTAL	49	75	23	26	0	46	0	0	16	6	0	95	336

ROUTE P06 SUVA (FIJI) to AUCKLAND #/YEAR = 160 #/MON = 13

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ARGENTINA STAR	7	0	0	0	0	0	0	0	0	0	0	0	7
COLUMBUS COROMA	12	12	11	10	11	0	38	0	0	34	11	0	139
COLUMBUS FLORIDA	0	0	0	10	0	0	0	9	9	0	3	0	31
ROUTE TOTAL	19	12	11	20	11	0	38	9	9	34	14	0	177

ROUTE P08 AUCKLAND to PANAMA #/YEAR = 700 #/MON = 58

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AMERICA STAR	9	7	55	1	49	0	4	44	0	54	0	13	236
MELBOURNE STAR	0	0	0	63	0	9	53	0	57	0	1	53	236
QUEENSLAND STAR	0	0	0	0	61	52	50	1	6	47	53	52	322
ROUTE TOTAL	9	7	55	64	110	61	107	45	63	101	54	118	794

ROUTE P09 HAWAII to FIJI/AUCKLAND #/YEAR = 440 #/MON = 37

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COLUMBUS COROMA	0	0	0	27	0	0	0	0	0	14	16	0	57
COLUMBUS FLORIDA	0	0	0	0	0	0	0	24	0	0	0	0	24
ROSSEL CURRENT	0	0	0	0	0	0	0	0	0	0	0	49	49
ROUTE TOTAL	0	0	0	27	0	0	0	24	0	14	16	49	130

ROUTE P10 HAWAII to GUAM/SAIPAN #/YEAR = 440 #/MON = 37

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CSX ENTERPRISE	26	27	8	11	24	27	16	13	28	14	6	17	217
CSX NAVIGATOR	12	6	12	18	0	14	22	5	17	34	20	12	172
CSX PACIFIC	0	7	7	0	0	0	0	0	0	0	0	0	14
ROUTE TOTAL	38	40	27	29	24	41	38	18	45	48	26	29	403

ROUTE P11 FLORES SEA to JAPAN #/YEAR = 320 #/MON = 27

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
EMERALD INDAH	0	0	0	0	0	0	0	0	0	17	0	0	17
ROUTE TOTAL	0	0	0	0	0	0	0	0	0	17	0	0	17

ROUTE P12 TAHITI to NOUMEA #/YEAR 370 #/MON 31

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COLUMBUS FLORIDA	0	0	0	0	0	0	0	6	10	0	0	0	16
ROUTE TOTAL	0	0	0	0	0	0	0	6	10	0	0	0	16

ROUTE P13 NEW ZEALAND to CALIFORNIA #/YEAR = 770 #/MON = 64

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COLUMBUS FLORIDA	0	65	19	40	49	0	70	0	0	51	14	41	349
DIRECT FALCON	0	0	0	0	0	0	0	0	51	34	11	50	146
ROSSEL CURRENT	0	0	0	40	18	0	0	0	9	57	0	0	124
ROUTE TOTAL	0	65	19	80	67	0	70	0	60	142	25	91	619

ROUTE P18 TAHITI to CALIFORNIA #/YEAR = 440 #/MON = 37

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ARGENTINA STAR	2	30	0	0	0	0	0	0	0	0	0	0	32
COLUMBUS COROMA	0	3	35	0	0	35	0	0	36	0	0	34	143
COLUMBUS FLORID	0	0	36	0	0	27	7	28	21	17	0	0	136
NORDCLIFF	37	0	0	0	0	0	0	0	0	0	0	0	37
POLYNESIA	40	38	37	29	6	20	41	7	27	20	19	34	318
TAUSALA SAMOA	0	0	0	0	0	37	35	33	35	35	36	27	238
ROUTE TOTAL	79	71	108	29	6	119	83	68	119	72	55	95	904

ROUTE P25 VALPARAISO to JAPAN/KOREA #/YEAR = 1,320 #/MON = 110

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NACRE	10	41	74	0	90	26	39	90	0	101	25	26	522
ROUTE TOTAL	10	41	74	0	90	26	39	90	0	101	25	26	522

ROUTE P26 TRANSPAC to TRANSPAC #/YEAR 5,500 #/MON 458

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CSX ENTERPRISE	8	30	28	21	29	32	13	7	1	9	6	0	184
CSX NAVIGATOR	37	0	29	0	0	0	0	0	0	0	0	0	66
CSX PACIFIC	5	0	9	34	0	0	0	0	0	0	0	0	48
CSX TRADER	2	3	0	0	0	0	0	0	0	0	0	0	5
EMERALD INDAH	0	0	0	0	17	10	0	49	27	0	0	0	103
RUBY INDAH	33	0	16	0	0	2	0	0	0	0	25	2	78
SAGA SPRAY	1	0	0	0	0	0	0	0	0	0	0	0	1
SEA-LAND DEFEND	7	21	0	0	26	0	0	0	0	0	28	15	97
SEA-LAND DEVELO	31	14	41	0	9	24	25	56	1	27	16	0	244
SEA-LAND EXPRES	0	0	18	22	0	30	13	0	39	7	21	0	150
SKAUBOARD	43	22	27	26	36	2	0	0	0	0	0	0	156
SKAUBRYN	3	1	41	49	14	67	61	8	0	41	3	3	291

SKAUGRAN	0	0	0	5	5	0	10	0	10	8	11	2	51
TAI HE	44	3	39	31	15	30	28	15	30	26	17	38	316
WESTWOOD BELINDA	25	17	29	31	37	20	18	14	8	4	16	5	224

ROUTE TOTAL	239	111	277	219	188	217	168	149	116	122	143	65	2014

ROUTE P28 TAHITI to SYDNEY/AUCKLAND #/YEAR = 240 #/MON = 20

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ARGENTINA STAR	8	0	0	0	0	0	0	0	0	0	0	0	8
COLUMBUS COROMA	0	24	0	0	7	15	0	0	25	0	0	20	91
COLUMBUS FLORIDA	2	0	24	0	0	16	0	0	22	0	0	0	64

ROUTE TOTAL	10	24	24	0	7	31	0	0	47	0	0	20	163

ROUTE P29 TAHITI to VALPARAISO #/YEAR 560 #/MON 47

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COPACABANA	0	0	0	0	0	0	0	0	0	0	12	33	45

ROUTE TOTAL	0	0	0	0	0	0	0	0	0	0	12	33	45

ROUTE P31 CALIFORNIA to NOUMEA/SUVA #/YEAR 880 #/MON 73

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ARGENTINA STAR	29	0	0	0	0	0	0	0	0	0	0	0	29
COLUMBUS COROMA	74	14	41	0	38	44	40	71	20	22	41	0	405
COLUMBUS FLORIDA	0	0	0	1	27	0	0	0	0	0	0	0	28
POLAR SEA	0	0	0	0	0	0	0	0	0	1	25	0	26
POLYNESIA	0	0	1	0	0	0	0	0	0	0	4	0	5
ROSSEL CURRENT	2	0	62	0	31	33	0	0	0	0	55	0	183
TAUSALA SAMOA	0	0	0	0	0	0	0	0	0	0	0	6	6

ROUTE TOTAL	105	14	104	1	96	77	40	71	20	23	125	6	682

ROUTE P32 AUCKLAND to SYDNEY #/YEAR = 170 #/MON = 15

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
MELBOURNE STAR	0	0	0	0	1	0	0	0	0	0	0	0	1

ROUTE TOTAL	0	0	0	0	1	0	0	0	0	0	0	0	1

ROUTE P37 HAWAII to CALIFORNIA #/YEAR 250 #/MON 21

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
COLUMBUS COROMA	0	0	0	18	0	0	0	0	0	0	23	0	41
COLUMBUS FLORIDA	0	0	0	0	0	0	0	13	0	0	0	0	13
CSX ENTERPRISE	7	25	9	8	0	16	13	9	16	0	17	0	120
CSX NAVIGATOR	4	0	3	7	0	0	0	0	0	0	0	0	14
CSX PACIFIC	0	5	5	0	0	0	0	0	0	0	0	0	10
SEA-LAND DEFEND	0	0	0	0	0	0	0	0	0	0	0	1	1
ROUTE TOTAL	11	30	17	33	0	16	13	22	16	0	40	1	199

ROUTE P38 HAWAII to ALASKA #/YEAR = 320 #/MON = 27

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CHEVRON MISSISS	36	36	28	0	54	13	46	33	28	3	28	1	306
ROUTE TOTAL	36	36	28	0	54	13	46	33	28	3	28	1	306

ROUTE P40 HAWAII to JAPAN #/YEAR 450 #/MON 38

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NACRE	45	0	4	35	0	43	0	15	29	0	47	0	218
ROUTE TOTAL	45	0	4	35	0	43	0	15	29	0	47	0	218

ROUTE P44 TAIWAN to GUAM #/YEAR 160 #/MON 13

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CSX ENTERPRISE	12	1	15	10	8	12	9	7	12	0	5	12	103
CSX NAVIGATOR	18	0	11	11	0	10	0	10	9	19	1	6	95
CSX PACIFIC	0	4	9	1	0	0	0	0	0	0	0	0	14
ROUTE TOTAL	30	5	35	22	8	22	9	17	21	19	6	18	212

ROUTE P49 JAPAN/TAIWAN to SINGAPORE #/YEAR 300 #/MON 25

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CSX ENTERPRISE	0	0	0	0	2	0	0	0	0	0	0	0	2
CSX NAVIGATOR	0	0	0	0	0	0	2	0	0	0	0	0	2
P&O NEDLLOYD CO	0	0	0	0	0	0	0	0	1	0	0	0	1
ROUTE TOTAL	0	0	0	0	2	0	2	0	1	0	0	0	5

ROUTE P50 VALPARAISO to AUCKLAND #/YEAR = 720 #/MON = 60

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
LYDIA OLDENDORF	8	17	0	48	11	0	0	0	55	0	0	52	191
ROUTE TOTAL	8	17	0	48	11	0	0	0	55	0	0	52	191

ROUTE P81 HONOLULU to CORONEL (CHILE) #/YEAR = 800 #/MON = 67

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NACRE	26	49	0	75	3	21	58	0	82	0	20	38	372
ROUTE TOTAL	26	49	0	75	3	21	58	0	82	0	20	38	372

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Total monthly XBT collections for the year 2000:

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
1001	733	994	824	887	900	893	982	916	1001	887	1044

Yearly total = 11,062

*Delayed Mode XBT Data Received at AOML
from January through December 2000 and forwarded to the
National Oceanographic Data Center (NODC) for archival*

<u>Call Sign</u>	<u>Ship</u>	<u>Data Received</u>
BOAB	TAI HE	8/1/96 - 9/4/96 9/13/96 - 10/16/96 12/7/99 - 2/14/00 2/26 - 3/29/00 4/8 - 5/11/00 5/25 - 6/24/00 5/25 - 6/24/00 7/3 - 8/5/00 8/18 - 9/20/00 9/26 - 10/31/00
C6CE7	WESTWOOD BELINDA	9/17/99 - 12/13/99 9/17/99 - 12/13/99 12/27/99 - 2/7/00 12/27/99 - 2/7/00 2/22 - 4/4/00 4/18/00 - 5/31/00 6/14/00 - 7/24/00
C6MD8	ARGENTINA STAR	12/29/99 - 2/9/00 12/29/99 - 2/7/00
D5NZ	MV POLYNESIA	1/13/00 - 1/22/00 1/13/00 - 1/22/00 2/14/00 - 3/30/00 2/14/00 - 3/30/00 4/23/00 - 5/2/00
DDGY	COLUMBUS COROMANDAL	12/21/99 1/6/00 - 3/10/00 3/29 - 4/27/00 5/3 - 6/14/00 5/3 - 6/14/00 7/4/00 - 8/2/00 8/5/00 - 9/21/00

		10/10 - 11/9/00
DDGF	COLUMBUS FLORIDA	12/22/99 - 1/4/00 2/6/00 - 3/23/00 3/26 - 5/8/00 3/26 - 5/8/00 5/14 - 7/2/00 5/14 - 7/2/00 7/5 - 8/16/00 7/5 - 8/16/00 8/21 - 10/5/00 10/8 - 11/8/00
DNMR	POLYNESIA	6/22 - 7/4/00 7/25 - 8/2/00 8/22/00 9/24/00 - 10/10/00 10/24 - 11/4/00
ELWQ5	DIRECT FALCON	7/18 - 9/15/00 10/22 - 11/3/00
GOVL	MELBOURNE STAR	4/3 - 5/2/00 6/28 - 7/13/00
GZKA	AMERICA STAR	12/8/99 - 4/19/00 5/17 - 5/30 7/4/00 7/31/00 - 8/14/00
J8FI6	ROSSEL - CURRENT	12/25/99 - 1/4/00 12/25/99 - 1/4/00 2/18 - 5/6/00 2/18 - 5/6/00 8/7 - 13/00 9/29 - 10/14/00
KDJB	SEA-LAND DEFENDER	1/25/00 - 2/23/00 5/23/00 - 5/30/00
KGJB	SEA-LAND DEFENDER	5/23/00 - 5/30/00
KRGB	CSX-ENTERPRISE	1/14 - 2/11/00

		1/14 - 2/11/00
		2/14 - 3/17/00
		3/23 - 4/21/00
		4/23 - 5/26/00
		6/22 - 6/30/00
		7/7 - 9/5/00
		9/23
		10/7 - 11/00
		10/14 - 11/14/00
KGID	SEA-LAND EXPRESS	3/3 - 4/6/00
KGJD	SEA-LAND EXPRESS	6/4 - 13/00
		6/4 - 13/00
		7/22 - 26/00
		9/5 - 14/00
		10/19 - 11/21/00
KIRF	CSX HAWAII	5/27 - 7/10/00
KIRH	SEA-LAND TRADER	1/16 - 2/15/00
KHRH	SEA-LAND DEVELOPER	2/19 - 3/21/00
		2/19 - 3/19/00
		5/1 - 6/20/00
		5/1 - 6/20/00
		7/28 - 8/29/00
		9/26 - 11/6/00
LACF5	SKAUBOARD	12/29/99 - 1/30/00
		2/10 - 3/24/00
LADB2	SKAUGRAN	12/21/99
		4/18/00-5/29/00
		7/14/00 - 7/22/00
		9/15 - 11/7/00
LAJV4	SKAUBRYN	1/14 - 3/12/00
		3/25 - 6/16/00
		6/24/00 - 7/26/00
		8/16 - 10/31/00
LATI4	SAGA SPRAY	7/18/99
		8/17/99
		11/30/99

		12/10 - 11/99 1/4/00
MQLN7	NOLIZWE	1/21 - 2/5/00 1/21 - 5/9/00 3/14 - 3/28/00 5/1 - 5/9/00 5/1 - 16/00 6/18 - 7/2/00 8/8 - 23/00
MQLN7	SAFMARIN NOLIZWE	9/28 - 10/12/00
MTQU3	NOMZI	1/20 - 2/13/00 4/3 - 4/21/00 5/19 - 6/2/00 7/6 - 19/00 8/21 - 9/5/00
MZBM7	QUEENSLAND STAR	5/2 - 6/26/00
P3GB4	TUI PACIFIC	1/9 - 1/18/00 1/9 - 1/18/00
PGGB	TMM MORELOS	6/29 - 7/8/00 8/21 10/6 - 10/10/00
PJJU	OLEANDER	1/13 - 14/99 2/12 - 13/99 3/13/99 3/13/99 4/9 - 14/99 6/4 - 9/99 7/16 - 21/99 8/14 - 19/99 10/9/99 11/12 - 13/99 12/4/99 1/14 - 19/00 3/3 - 8/00 4/18 - 20/00 6/8-13/00 6/15 - 7/12/00 8/4 - 9/00 11/10 -14/00

S6ID	EMERALD INDAH	3/24 - 8/14/00
S6LA	SELFOSS	3/20 - 21/00
		1/17 - 24/00
		1/23 -24/00
		2/28 - 3/21/00
		3/20 - 21/00
		3/24 - 4/16/00
		3/24 - 4/19/00
		4/15 - 16/00
		5/16 - 6/13/00
		5/16 - 17/00
		5/16 - 7/8/00
V2A03	HANSEWALL	11/25 - 12/12/99
		1/8 - 2/6/00
V2KS	TAUSALA-SAMOA	6/6 - 21/00
		7/11 - 19/00
		8/10 - 18/00
		9/10 - 18/00
		10/11 - 19/00
		11/11 - 20/00
V2XM	SKOGAFOSS	1/16 - 19/00
		9/19 - 10/15/00
		11/11 - 12/00
V2XM	GODAFOSS	1/16 - 1/19/99
WAUU	ENDURANCE	1/27 - 3/4/00
WAUW	ENDEAVOR	10/12/99
		10/11 - 12/30/99
		2/18 - 3/26/00
		3/31 - 5/6/00
		5/12 - 7/24/00
		8/1 - 9/3/00
WAUY	ENTERPRISE	1/3 - 2/11/00
		2/21 - 4/1/00
		4/4 - 5/23/00
		7/4 - 8/2/00
WPGK	CSX-NAVIGATOR	7/2 - 9/2/99
		12/23/99 - 1/20/00

		12/23/99 - 1/20/00
		1/26/00 - 2/4/00
		3/5 - 3/30/00
		4/6 - 21/00
		6/22 - 7/1/00
		7/25 - 8/5/00
		8/31 - 9/9/00
		10/3 - 14/00
		11/8 - 14/00
WSRL	SEA-LAND PACIFIC	1/7 - 8/00
		1/7 - 8/00
		2/10 - 4/14/00
WTEJ	MCARTHUR	7/17 - 12/99
		7/17 - 12/99
WXBR	CHEVRON MISSISSIPPI	11/23/99 - 1/18/00
		11/23 - 11/29/99
		1/3 - 18/00
		2/2 - 6/00
		2/2 - 15/00
		2/2 - 22/00
		6/30 - 7/14/00
3EZ16	NACRE	9/9 - 10/11/98
		9/9 - 10/11/98
		11/19/98 - 1/02/99
		5/11 - 7/9/99
		5/27 - 7/1/99
9KKL	KAZIMAH	8/13 - 12/31/99
		3/6 - 5/23/00
9VND	RUBY INDAH	10/30/99 - 1/31/00
		1/1/00
		3/25/00
		10/30/99 - 5/26/00

**Delayed Mode Meteorological Data Received at AOML
and submitted to the National Climatic Data Center (NCDC) from March
through December 2000 ***

(*prior to March 2000 this data was submitted to the SEAS office in Silver Spring, Maryland)

March 2000

Call Sign

Ship Name

3FRY9	UNKNOWN
BOAB	TAI HE
C6CE7	WESTWOOD BELINDA
D5NZ	MV POLYNESIA
DGGD	UNKNOWN
ELWQ5	DIRECT FALCON
KGJB	SEA-LAND DEFENDER
KRGB	CSX ENTERPRISE
LACF5	SKAUBOARD
LAJV4	SKAUBRYN
LATI4	SAGA SPRAY
P3GB4	TUI PACIFIC
S6ID	EMERALD INDAH
V7BZA	UNKNOWN
WGXO	UNKNOWN
WPGK	CSX NAVIGATOR
WPKS	UNKNOWN
WSRL	SEA-LAND PACIFIC
WTEJ	MACARTHUR
WXBR	CHEVRON MISSISSIPPI

April 2000

3FRY9	UNKNOWN
BOAB	TAI HE
C6CE7	SEALAND PACIFIC
D5NZ	MV POLYNESIA
DGGD	UNKNOWN
KGJD	SEALAND EXPRESS
KRGB	UNKNOWN
KRHX	UNKNOWN
KRPD	UNKNOWN

Call Sign

Ship Name

LACF5
LATI4
P3GB4
V7BZ4
WCHF
WGLA
WG XO
WJBJ
WPGK
WPKD
WPKS
WSRL
WTEJ
WXBR
ZSDS

SKAUBORD
SAGA SPRAY
TUI PACIFIC
UNKNOWN
UNKNOWN
UNKNOWN
UNKNOWN
UNKNOWN
UNKNOWN
CSX NAVIGATOR
UNKNOWN
CHEVRON MISSISSIPPI
SEALAND PACIFIC
MCARTHUR
CHEVRON MISSISSIPPI
UNKNOWN

May 2000

BOAB
D5NZ
KHRH
KRGB
V2KS
WSRL

TAI HE
MV POLYNESIA
SEALAND DEVELOPER
CSX ENTERPRISE
TAUSALA-SAMOA
SEALAND PACIFIC

June 2000

9KKL
BOAB
C6CE7
ELWQ5
KGJB
KGJD
KHRH
LADB2
MQLN7
PJJU
WAUU

KAZIMAH
TAI-HE
WESTWOOD BELINDA
DIRECT FALCON
SEA-LAND DEFENDER
SEA-LAND EXPRESS
SEA-LAND DEVELOPER
SKAUGRAN
SAFMARIN NOLIZWE
OLEANDER
ENDURANCE

Call Sign

Ship Name

WAUW
WAUY
WPGK

ENDEAVOR
ENTERPRISE
CSX-NAVIGATOR

July 2000

KRGB
PGGB
PJJU
V2KS

CSX-ENTERPRISE
TMM MORELOS
OLEANDER
TAUSALA-SAMOA

August 2000

9KKL
9VND
BOAB
C6CE7
LAVJ4
MQLN7
MTQU3
PJJU
V2KS
WAUU
WAUW
WAUY
WPGK

KAZIMAH
RUBY INDAH
TAI-HE
WESTWOOD BELINDA
SKAUBRYN
NOLIZWE
NOMZI
OLEANDER
TAUSALA-SAMOA
ENDURANCE
ENDEAVOR
ENTERPRISE
CSX-NAVIGATOR

September 2000

BOAB
D5NZ
ELWQ5
KGJB
KGJD
KHRH
LADB2
LAJV4
S6ID

TAI HE
MV POLYNESIA
DIRECT FALCON
SEA-LAND DEFENDER
SEA-LAND EXPRESS
SEA-LAND DEVELOPER
SKAUGRAN
SKAUBRYN
EMERALD INDAH

Call Sign

Ship Name

V2KS
WXBR

TAUSALA-SAMOA
CHEVRON MISSISSIPPI

October 2000

BOAB
GOVL
GZKA
J8FI6
KGJD
KIRF
KRGB
MQLN7
MTQU3
MZBM7
V2KS
WAUW
WAUY
WPGK

TAI HE
MELBOURNE STAR
AMERICA STAR
ROSSEL-CURRENT
SEA-LAND DEFENDER
CSX-HAWAII
CSX-ENTERPRISE
NOLIZWE
NOMZI
QUEENSLAND STAR
TAUSALA-SAMOA
ENDEAVOR
ENTERPRISE
CSX-NAVIGATOR

November 2000

9VND
BOAB
KGJB
KHRH
LADB2
LAJV4
PGBB
PJJU
V2KS
WPGK

RUBY INDAH
TAI HE
CSX-ENTERPRISE
SEA-LAND DEVELOPER
SKAUGRAN
SKAUBRYN
TMM MORELOS
OLEANDER
TAUSALA-SAMOA
CSX-NAVIGATOR

December 2000

ELWQ5
J8FI6
KGJD

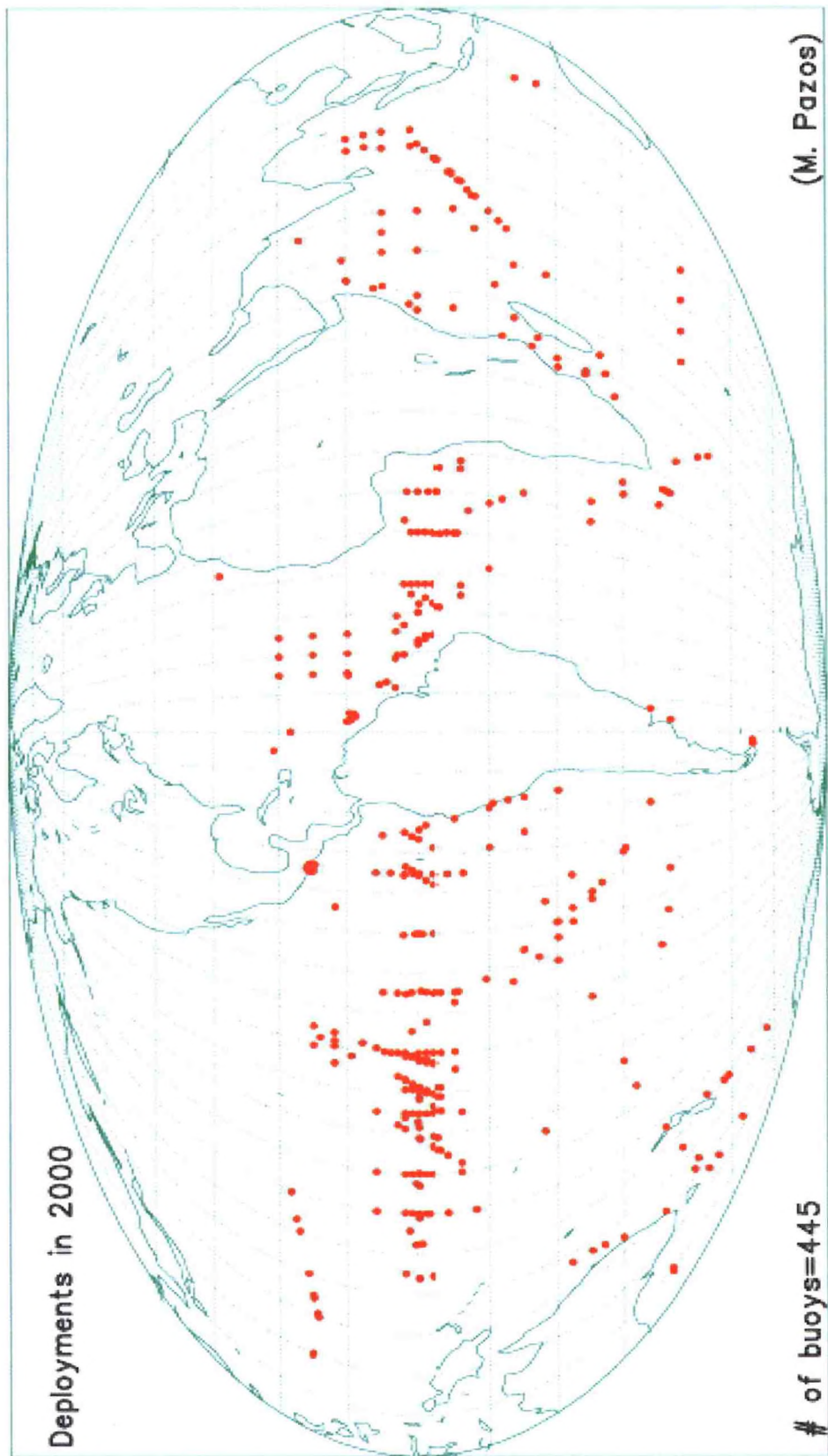
DIRECT FALCON
ROSSEL-CURRENT
SEA-LAND EXPRESS

KRGB
LADB2
PJJU
V2KS
WPGK

CSX-ENTERPRISE
SKAUGRAN
OLEANDER
TAUSALA-SAMOA
CSX-NAVIGATOR

The plot on the following page shows new drifter deployments made during 2000

Status of Global Drifter Array



Statistics

The chart below displays plans for the deployment of drifters from October 2000 through September 2000.

2000 - 2001 Plans

Plans are for the deployment of 419 Drifters during the period between October 2000 and September 2001.

<u>Tropical Oceans</u>	<u># of Drifters</u>	<u>Southern Oceans</u>	<u># of Drifters</u>
• Tropical Pacific	205	• Pacific	35
• Tropical Atlantic	78	• Atlantic	20
• Tropical Indian	50	• Indian	22
• 20 buoys have been upgraded with Barometers by Meteo-France and the Australian Bureau of Meteorology		• 39% are being upgraded with Barometers	

9 WOTAN (Tropical Atlantic) drifters will be deployed in the Hurricane formation Region at the beginning of the 2001 Hurricane Season.

VOS/XBT VESSEL SAMPLING SCHEME FOR 2000

ATLANTIC

<u>Line ID</u>	<u>Ship/Call Sign</u>	<u>Tran/Yr.</u>	<u>Mon. Req.</u>	<u>Ann. Req.</u>	<u>Trans.</u>	<u>Start</u>
AX-4	Endeavor - WAUW Delaware Bay - WMLG	12	37	440	Std. C Std. C	>1990
AX-7	Contship America - 3EIP3 Morelos - PGBB	12 HD/4	43	520 920	Std. C GOES	>1990
AX-8	Nolizwe - MQLN7 Nomzi - MTQU3	12	80	960	Std. C Std. C	>1990
AX-10	CSX Hawaii - KIRF	12 HD/4	17	200 400	Std. C	1992
AX-29	Copacabana - PPXI	12	48	580	Std. C	>1990
AX-32	Oleander - PJJU	12	10	120		1971
AX-33	Skogafoss - V2XM	12	10	12		1974
	<u>Atlantic Total</u>		<u>4152</u>			

Indian Ocean

<u>Line ID</u>	<u>Ship/Call Sign</u>	<u>Tran/Yr.</u>	<u>Mon. Req.</u>	<u>Ann. Req.</u>	<u>Trans.</u>	<u>Start</u>
IX-6	S. A. Oranje - ZSDN S.A. Vaal - ZSDS	12	28	340	GOES Std. C	1995
IX-7	Al Awdah - 9KWA Al Samidoon - 9KKF	12	40	480	Std. C Std. C	1995
IX-21	S. A. Oranje - ZSDN S.A. Vaal - ZSDS	12	15	180	GOES Std. C	1995

1000

Indian Ocean Total

Pacific Ocean

PX-1	Emerald Indah - S6ID Ruby Indah - 9VND	12	72	860	Std. C	>1975
PX-8	Melb. Star - GOVL Queen. Star - MZBM7	12	58	700	Std. C Std. C	>1975
PX-9	Col. Coromandel - PDGY	12	37	440	Std. C	>1975

Pacific Ocean (cont'd)

<u>Line ID</u>	<u>Ship/Call Sign</u>	<u>Tran/Yr.</u>	<u>Mon. Req.</u>	<u>Ann. Req.</u>	<u>Trans.</u>	<u>Start</u>
PX-10	CSX Enterprise - KRGB CSX Navigator - WPGK	12 SIO/HD	37	440	Std. C Std. C	>1975
PX-13	Col. Florida - DDFG Col. Coromandel - PDGY	12	64	770	Std. C Std. C	>1975
PX-18	Polynesia - V2CAZ Tausala Samoa - V2KS	18	24	440	Std. C Std. C	>1975
PX-25	Nacre - 3EZI6	12 SIO/HD	110	1320	Std. C	1998
PX-26	Tai He - BOAB S/L Defender - KGJB JMA West. Belinda - C6CE7 Skaubryn - LAJV4 Skaugran - LADB2 Skaubord - LACF5	18 JMA JMA JMA JMA	306	5500	Std. C Std. C Std. C Std. C Std. C	>1975
PX-31	Col. Coromandel - PDGY	12	73	880	Std. C	>1975
PX-37	CSX Enterprise - KRGB CSX Navigator - WPGK	12 SIO/HD	21	250	Std. C Std. C	>1975
PX-38	Chev. Miss. - WXBR	12 SIO/HD	27	320	Std. C	1998
PX-40	Nacre - 3EZI6 12	38	450		Std. C	1999

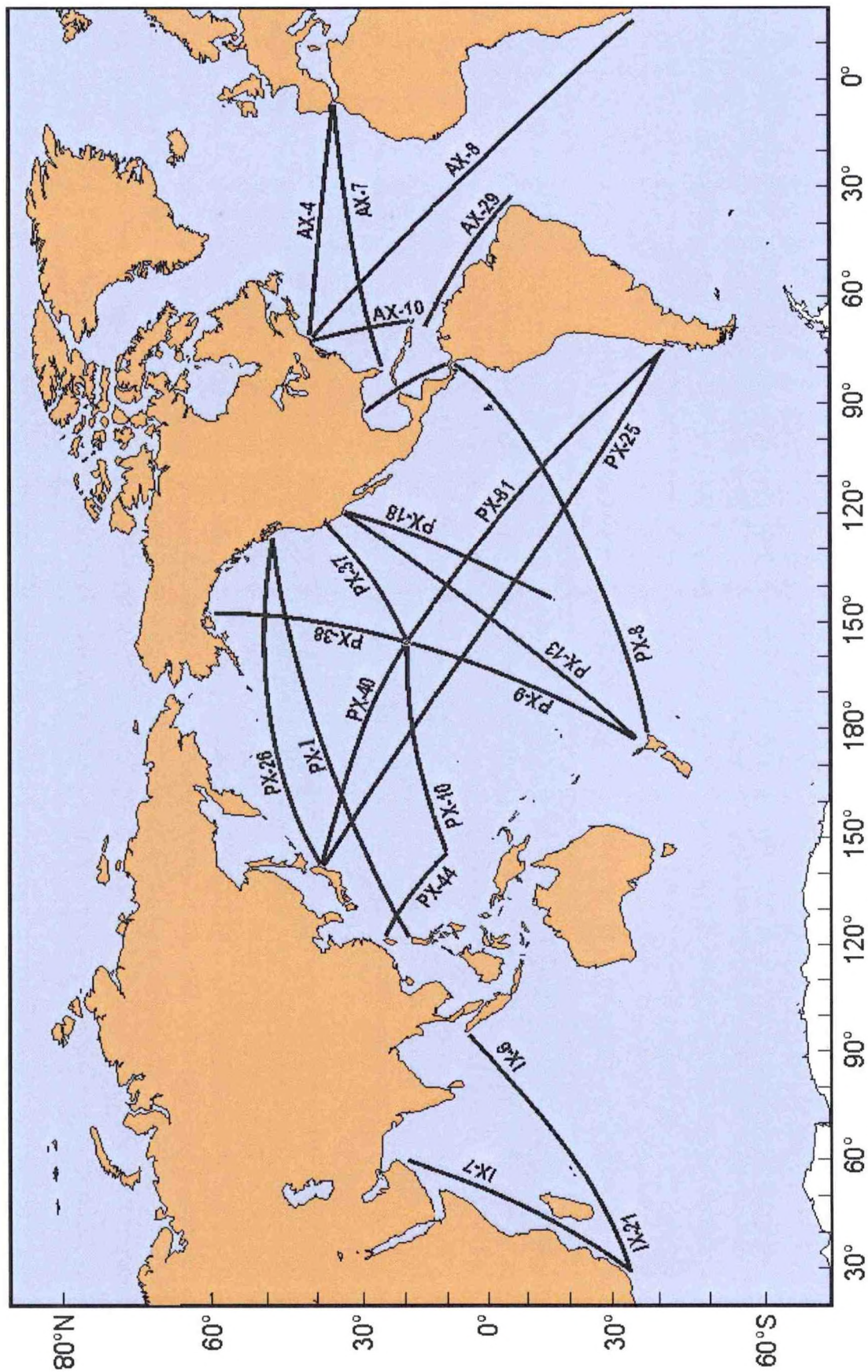
Pacific Ocean (cont'd)

<u>Line ID</u>	<u>Ship/Call Sign</u>	<u>Tran/Yr.</u>	<u>Mon. Req.</u>	<u>Ann. Req.</u>	<u>Trans.</u>	<u>Start</u>
PX-44	CSX Enterprise - KRGB CSX Navigator - WPGK	12 SIO/HD	13	160	Std. C Std. C	1992
PX-38	Chev. Miss. - WXBR	12 SIO/HD	27	320	Std. C	1998
PX-40	Nacre - 3EZI6	12	38	450	Std. C	1999
PX-44	CSX Enterprise - KRGB CSX Navigator - WPGK	12 SIO/HD	13	160	Std. C Std. C	1992
PX-81	Nacre - 3EZI6	12 SIO/HD	67	800		

Pacific Total 7,830

Total all Oceans 12,982

XBT Lines Operated During 2000



Sippican Deep Blue XBT Contract Expenditures for the year 2000

(Table indicates expenditures for both contract and fiscal year)

Contract Base Year

<u>Destination</u>	<u>Cases</u>	<u>Freight</u>	<u>Invoice Amt.</u>
Australia	72	\$ 1,095.03	\$ 25,747.20
Baltimore, MD	108	742.80	38,620.80
Bay St. Louis, MS	162	702.60	57,931.20
Brest, France	135	0.00	48,276.00
Cape Town, So. Africa	54	1,276.04	19,310.40
Durban, So. Africa	54	1,276.04	19,310.40
Honolulu, HA	162	2,043.20	57,931.20
Houston, TX	189	700.80	67,586.40
Miami, FL	241	1,675.64	86,181.60
Norfolk, VA	324	2,225.50	115,862.40
Noumea, New Caledonia	189	3,206.71	67,586.40
Rotterdam, Netherlands	27	490.35	9,655.20
S. Amboy, NJ	54	516.60	19,310.40
San Diego, CA.	18	116.31	6,436.80
Seattle, WA.	540	2,835.62	193,104.00
Terminal Is., CA.	549	2,080.40	196,322.40
Total	<u>2,878</u>	<u>\$ 20,983.64</u>	<u>\$ 1,029,172.80</u>

FY 00

Australia	18	\$ 0.00	\$ 6,436.80
Bay St. Louis, MS	162	702.60	57,931.20
Brest, France	54	0.00	19,310.40
Honolulu, HA	81	1,011.00	28,965.60
Houston, TX	135	467.00	48,276.00
Miami, FL	178	1,239.56	63,652.80
Norfolk, VA	216	1,498.70	77,241.60
Noumea, New Caledonia	81	0.00	28,965.60
S. Amboy, NJ	54	516.60	19,310.40
San Diego, CA	18	116.31	6,436.80
Seattle, WA	270	1,617.62	96,552.00
Terminal Is., CA	279	1,266.40	99,770.40
Total	<u>1546</u>	<u>\$ 8,435.79</u>	<u>\$ 552,849.60</u>

GTS Statistics for the year 2000

The list below shows the type of data and number of observations received from the GTS.

<u>Data</u>	<u>Number of Observations</u>
Surface Marine	1,634,643
Buoy	3,156,945
Float	7,489
Bathy	34,330
TAO	83,330
TESAC	2,952
TRACKOB	84,608