SOOP Report for 2014 **USA**

a. Programme description:			
Line	**Agency**	**Sampling programme and mode (if applicable)**	**No. of ships**
AX01	AOML[1] / IRD[2]	High Density (HD)	1
AX02	AOML / IRD	HD	1
AX07	AOML	HD	4
AX08	AOML	HD	2
AX10	AOML	HD	1
AX18	AOML	HD	4
AX20	AOML / IRD	HD	1
AX22	SIO[3]	HD	1
AX25	AOML / UCT[4]	HD	1
AX32	WHOI[5] / NMFS[6]	HD	1
AX90	URI[7] / SBU[8]	HD	1
AX97	AOML / FURG[9]	HD	3
IX01	AOML / BOM[10]	Frequently Repeated (FR)	1
IX12	AOML / BOM	FR	4
IX21	SIO	HD	2
IX28	CSIRO[11] / SIO / AOML	HD	1
MX01	ENEA[12] / AOML	HD	1
MX02	ENEA / AOML	HD	1
MX04	ENEA / AOML	HD	2
PX05	SIO	HD	1
PX06	SIO	HD	1
PX09	SIO	HD	1
PX31	SIO	HD	1
PX37	SIO	HD	3
PX38	SIO	HD	1
PX39	SIO	HD	1

PX40	SIO / TU[13] / AOML	HD	1
PX30	SIO / CSIRO	HD	2
PX34	SIO / CSIRO	HD	1
PX44	SIO	HD	1

b. Data management

Agency	No. of JJVV messages on the GTS in 2014	Location of delayed-mode data
NOAA / AOML and Partners	6583	NODC / AOML / SIO / CSIRO
SIO / AOML	5517	NODC / AOML / SIO / CSIRO

Agency:

1. AOML: Atlantic Oceanographic and Meteorological Laboratory – AOML
2. IRD: Institute of Research for Development, France
3. SIO: Scripps Institution of Oceanography
4. UCT: University of Cape Town, South Africa
5. WHOI: Woods Hole Oceanographic Institution
6. NMFS: National Marine Fisheries Service – NOAA
7. URI: University of Rhode Island
8. SBU: Stony Brook University
9. FURG: Federal University of Rio Grande, Brazil
10. BOM: Bureau of Meteorology, Australia
11. CSIRO: Commonwealth Scientific and Industrial Research Organisation, Australia
12. ENEA: National Agency for new Technologies, Energy and Sustainable Economic Development, Italy
13. TU: Tohoku University

c. Major challenges and difficulties:

- Budget constraints in the US.
- Decreasing funding for ocean-spanning routes, and high scientific value in sustained boundary current observations, lead to challenges in adapting the design of existing networks to meet the new constraints and requirements.
- The evolution of the commercial shipping industry, to fewer routes with larger ships, and with increasing security concerns that impact ports and ship-riders, both increase the challenges of sustaining multi-decadal time series observations.
- Limited budget available to contribute with probes and equipment to international collaborators.
- It is difficult to find and recruit ships along AX10 (Newark to Puerto Rico), AX07 (Gibraltar to Miami), and AX18 (Buenos Aires to Cape Town) due to changes in shipping industry.
- Similarly, tanker traffic along PX38 (Hawaii to Alaska) is no longer available and Coast Guard opportunities are too limited to continue to provide surety of sampling along this transect.
- Communicate to the scientific and operational communities the new goals of the XBT network given the full implementation of Argo.

d. Research / development / testing:

- All SEAS XBT data continue being transmitted from SOO to NOAA in full resolution profiles and all data are placed into the GTS by NOAA.
- AOML/SOOP continues to develop and upgrade AMVERSEAS for the recording of XBT and Thermosalinograph (TSG) observations.
- XBT data transmissions to the GTS using BUFR format are performed regularly, along with ASCII BATHY bulletins.
- SOOP continues to support the deployment of other observational platforms such as drifters and Argo floats.
- AOML/SOOP continues to work in other XBT related projects including experiments for the study of the XBT fall rate equation issue.
- AOML/SOOP worked in collaboration with international partners in the maintenance of XBT high density transects in the Atlantic Ocean (AX01, AX02, and AX20), in the Mediterranean Sea (MX01, MX02, and MX04), and in the Pacific Ocean (PX40).
- SIO worked in collaboration with international partners in the maintenance of the XBT high density transects in Pacific Ocean (PX30, PX34 and PX40), the Southern Ocean (IX28), and the Indian Ocean (IX21).
- The 4th XBT Workshop: XBT Science and the Way Forward was held in Beijing, China during 11-13 November 2014.

e. Other comments:

- NOAA / AOML continue to participate in collaborative programs with other institutions involved with XBT deployments. In particular, during 2014 AOML continued its collaboration in support of AX97 (Brazil), IX01, IX12, IX28 (BOM/Australia), AX01, AX02, AX20 (IRD/France), and PX40 (Tohoku University/Japan).
- SIO continue to participate in collaborative programs with other institutions involved with XBT deployments. In particular, during 2014 SIO continued its collaboration in support of PX30, PX34, IX21, IX28 (CSIRO, Australia), and PX40 (Tohoku University/Japan).
- Real time transmission and quality control procedures for the TSG data continue in operation. The TSG data set, including quality control flags, is being distributed through NOAA/NODC and GOSUD.