STAR 2000: McARTHUR WEEKLY REPORT
25 August 2000
Lisa T. Ballance

SCIENCE SUMMARY: 17 - 24 August (Note that this weekly includes eight days, rather than the typical seven.)

This week, we have traversed some 15 degrees of latitude and almost 20 degrees of longitude, from 4N 140W at the beginning of the week, to 21 N 148W from where this report comes. The wind has continued to be mild (see the Beaufort 3 and 4 conditions listed in the summary below). Out here, there were not a lot of cetaceans or seabirds; and yet here was where we encountered some four contacts with Japanese longliners one morning, another four that evening (the same ones perhaps?), and ran along strings of their longline gear for hours during the afternoon. At just over 8N, we turned to run due west for a couple of days. Then, and finally, we found the eastern tropical Pacific with which this scientist is more familiar. First, eureka! We found the ITCZ just where it should be, and just as we began to transit within that latitudinal band where it always is. Heavy rains shut us down for most of one day and stayed with us off and on for another three (so it *is* well developed -- and pretty thick out here). This is where the Pterodroma petrels seem to flourish. They are diverse and abundant -- so our birders stayed on effort, changing their wet clothes between shifts. Particularly intriguing was the 20th of August. On that day, as we threaded our way through a high-walled black canyon of squalls, we quite suddenly came upon the world's Pterodroma convention -- birds were swirling everywhere and remained hugely abundant right through the end of the day. That night at the dipnet station we watched as clouds of reddish amphipods colored the water in immense numbers. Strangely (?) we did not see many cetaceans that day (although one of our two sightings was a group of killer whales). Turning north again, we got a brief respite from the weather. Then, and finally, eureka! the trades. Just as expected, they hit us at 20+ knots (although not until we were just a day from the Hawaiian islands) and shut us down by early afternoon.

On the last day of this leg, we woke to a Beaufort 6 but by breakfast had passed into the lee of the big island of Hawaii, shadowing us from the northeast tradewinds. We transited the entire day along the lee shore with no whitecaps in sight and the tallest mountains in the world providing us with colors we had not seen for 30 days and spectacular scenery along our starboard side. That day we watched our first bowriders of the trip come to the ship: spotted dolphins and bottlenose.

We also launched the small boat on a group of pilot whales, obtained seven biopsy samples (the curse has been broken!) and many photos. Then, just after dinner, we passed out of the lee and into the channel between Hawaii and Maui ... and into instant Beaufort 6. The trip was over.

It has been a great start to our project, 30 days are behind us, another 90 to go (such is the size of our study area). We are to rest and reprovision in Honolulu for five days, then set

sail for Costa Rica, back across the Pacific with some 10,000 km of trackline ahead of us. Stay tuned for that story.

ACOUSTICS SQUEAKLY REPORT: (JAY BARLOW)

We've gotten quite good now at estimating where dolphin schools are with acoustics. The observers had misplaced a group of delphinids, and we offered the suggestion that they look 22 degrees off the bow. Low and behold, Richard found them at 20 degrees right. We will continue to work on our accuracy to avoid these glaring discrepancies in the future. Of course, we still cannot count them. And, of course, observers still claim job security.

Today we had a set back when we discovered a stress fracture in the first element of our high frequency array. We had just decided that this would be our standard array for the rest of the cruise because it was giving us better ability to hear in the forward quandrant, because it gave us better high frequency recordings, and because it was smoother to listen to (easy listening music). Now it needs a trip to the ship; and hopefully a repair in the time for the next in-port.

Dave Mellinger keeps sending us more and better updates to Ishmael, our acoustic software. This week he and Aaron Thode sent us new code that allows us to trace the whistle and beamform only on those narrow frequencies. If they can add an espresso maker, the package will be complete.

SIGHTINGS AND EFFORT SUMMARY FOR MARINE MAMMALS: 17 - 24 August

Date Start/Stop Time Lat Long Total NM Av. Beaufort

081700 0716 N04:30.91 W139:23.67 116.6 nmi 4.7
1832 N04:55.20 W140:36.44

081800 0622 N06:18.52 W141:01.78 103.9 nmi 3.8
1830 N08:08.30 W141:35.50

081900 0900 N08:25.38 W143:22.45 23.0 nmi 3.3
1833 N08:41.47 W144:50.15

082000 0640 N08:33.52 W146:12.84 111.7 nmi 4.1
1840 N08:42.92 W147:59.50

082100 0649 N09:35.90 W149:01.14 56.4 nmi 3.9
1901 N11:12.15 W148:59.46

082200 0656 N12:24.93 W150:03.58 98.0 nmi 3.2
1915 N14:04.02 W151:27.54

082300 0603 N15:38.30 W153:00.96 68.9 nmi 5.4
1453 N16:50.30 W154:10.42

082400 0615 N18:44.09 W156:00.21 73.5 nmi 3.0
1657 N20:01.37 W155:56.75

CODE	SPECIES	TOT#
002	Stenella attenuata (offshore)	7
003	Stenella longirostris (unid. subsp.)	1
011	Stenella longirostris (whitebelly)	7
018	Tursiops truncatus	4
021	Grampus griseus	2
034	Globicephala sp.	3
036	Globicephala macrorhynchus	1
037	Orcinus orca	1
049	ziphiid whale	1
077	unid. dolphin	5
079	unid. large whale	2
099	Balaenoptera borealis/edeni	1
TOTAL		35

COMMON DOLPHINS 0
SPOTTED/SPINNER 15
BLUE/HUMPBACK WH. 0
OTHER DELPHINIDS 16
OTHER CETACEANS 4

BIOPSY SUMMARY: 17 - 24 August

Species	Number of Samples	Cumulative Total
Globicephala	7	7
Tursiops truncatus	3	3
Stenella attenuata	1	1
Grand Total	0	11

35 mm PHOTO SUMMARY: 17 - 24 August

Species	Number of Schools/Individuals	Cumulative Total
Stenella attenuata	2	6
Stenella longirostris	1	6
Stenella coeruleoalba	0	1
Tursiops truncatus	1	2
Grampus griseus	0	1
Globicephala macrorhynchus	1	3
Indopacetus pacificus	0	1
Orcinus orca	1	1
Grand Total		21

OCEANOGRAPHIC SUMMARY: 17 - 24 August

Sampling	This Week	Total
CTDs	10	48
XBTs	28	79
Manta Tows	5	24
Ring Net Tows	0	9
Bongo Tows	5	24

Note that data from all CTD stations for the leg have been entered into Ocean Data View, courtesy Pierre Malan and Joe Shook. This has allowed us to visualize water column patterns in temperature, salinity, and chlorophyll even as we are steaming through that area and wondering about the biological patterns that we are seeing.