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MEASUREMENT REPORT

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ACOUSTIC MEASUREMENT CAMPAIGN BOAT ISLAND PASSAGE

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Validation Report	19 september 2016	This Report is	11 pages

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1. PURPOSE AND LOCATION

This report presents the acoustic measurement campaign conducted at anchor of ship Island Passage, on Bora Bora in French Polynesia.

2. CONDUCT OF MEASUREMENT

2.1. OPERATORS CONCERNED BY THE MISSION

M. Jean-Raphaël LOPEZ

Responsible for the study. Analysis and replay.

Assisted :

Caroline SOUCHE and Tevai-Arii RICHMOND
Christelle RERE

Operator measurement, analysis and editing of the report ;
Counting of measurement, analysis and report writing.

ADS be is registered in Papeete A RC under number 05 1286. It consists of a consulting firm that conducts regulatory investigations and measurements, sizes acoustic treatments.


2.2. MATERIAL RESOURCES

2.2.1. MEASUREMENT EQUIPMENT

The measurements are made with a DUO integrating sound level meter mark analyzer 01 dB METRAVIB with his CAL21 calibrator. These devices are Class 1.

A copy of metrology can be provided on request. These devices are calibrated for a period of two years.

The table below provides an overview all the elements of the measurement chain.

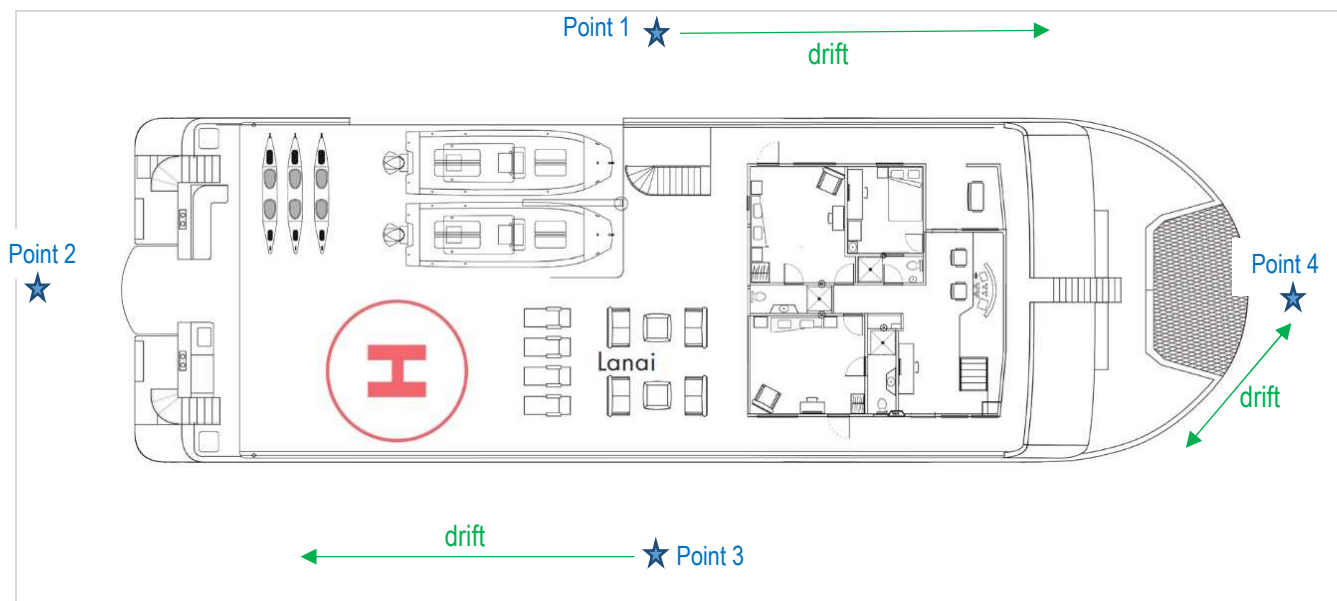
	integrating sound level meter analyzer DUO 01dB METRAVIB ACOEM with its calibrator CAL 21 class 1			
Equipment	Mark / Type	Serial N°	Approval N°	Date of calibration (valid for 2 years)
integrating Sound Level Meter	01dB METRAVIB	10406	LNE-21674-REV.0	13/05/2014
calibrator (*)	01dB METRAVIB CAL 21	34203474	F-05-1-1646	13/05/2014
Microphone	G.R.A.S 40CD	144977	LNE-21674-REV.0	13/05/2014
Ogive reference 0° et 90°	01 dB METRAVIB		Conforms to standard CEI 61672	13/05/2014
Software dBTRAIT (*)	01dB METRAVIB	5.3		

2.3. SOFTWARE RESOURCES

Results and formatting are operated using the software dBTRAIT.

3. BACKGROUND OF THE MISSION

3.1. LOCATION OF MEASURING POINTS



3.2. ORGANIZATION OF THE INTERVENTION

The noise levels were recorded as follows :

- o Measurement of residual noise with the engine stopped;
- o Measurement of noise with motor running.

MEASURING POINTS	DISTANCE	CONFIGURATION
Point 1	A 5 meters of boat	Engine off
Point 2	A 15 meters of boat	Engine off
Point 3	A 5 meters of boat	Engine off
	A 5 meters of boat	Engine on
Point 4	A 5 meters of boat	Engine off
	A 5 meters of boat	Engine on

MEASURING POINTS	DATE AND TIME SLOT	WEATHER CONDITIONS
Point 1	02/09/2016 10 h 27 – 10 h 32	Strong wind Agitated sea Cloud cover 70 %
Point 2	02/09/2016 09 h 27 – 09 h 32	
Point 3	02/09/2016 09 h 36 – 09 h 56	
Point 4	02/09/2016 10 h 00 – 10 h 22	

4. TECHNICAL REPORT

After collecting the noise levels at each point, we conducted the recount and analysis results that the summary tables below present the LAeq values of equivalent noise levels in dB (A). Acoustic measurements are discretized in octave band with an integration time of 1 second.

We also calculated the emergence, that is the difference between the ambient and residual level. It can be seen the impact of noise generated by the operation of the machinery of the ship.

4.1. RESULT OF MEASUREMENT OF NOISE LEVELS

This acoustic measurement campaign has identified the information below.

We used the index L_{90} fractile value to isolate individual sounds encountered. This takes into account 90% of the sounds that are most representative.

The bad weather has complicated field measurements at anchor ; however, the measurements are perfectly usable.

MEASURING POINTS	AMBIENT SOUND LEVEL		RESIDUAL SOUND LEVEL		EMERGENCE = AMBIENT - RESIDUEL
	$L_{A_{EQ}}$ DB(A)	L_{90}	$L_{A_{EQ}}$ DB(A)	L_{90}	
Point 1	-	-	70.5	57.5	-
Point 2	-	-	75.2	57.5	-
Point 3	79.7	67.9	79.1	62.7	5.2
Point 4	79.5	61.6	84.6	61.8	-0.2

Emergence tolerated : Day Period 7 h à 22 h = 5 dB(A) value rounded

Made in Papeete on 12/09/2016

Project Manager : Jean-Raphaël LOPEZ– ADS be
 Project officer : Caroline SOUCHE & Tevai-Arii RICHMOND
 Counting, Analysis and Writing : Christelle RERE
 Rereading : Caroline SOUCHE, Tevai-Arii RICHMOND & Jean-Raphaël LOPEZ

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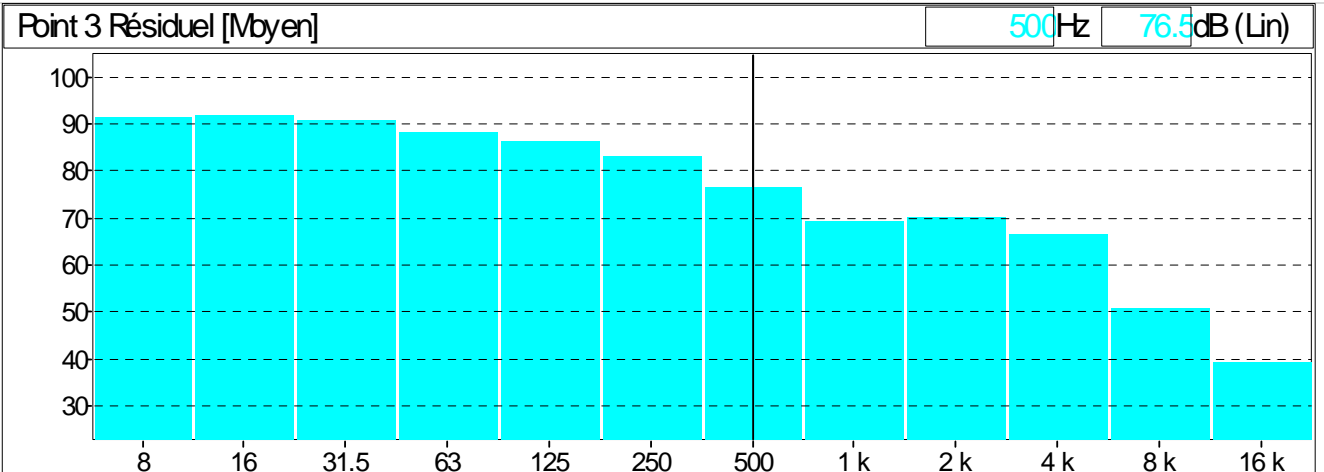
POINT 3 – RESIDUAL

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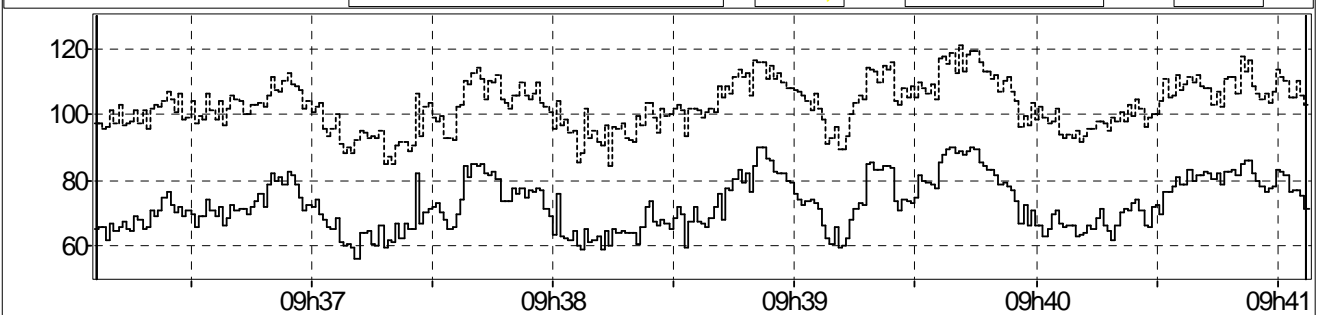
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Fin 02/09/2016 09:41

Voie	Type	Pond.	Unité	Leq	Lmin	Lmax	L90	L50
Point 3 Résiduel	Leq	A	dB	79,1	56,1	89,8	62,7	71,5
Point 3 Résiduel	Crête	C	dB		84,2	120,6		
Point 3 Résiduel	Oct 8Hz Lin		dB	91,2	65,6	104,6	75,7	87
Point 3 Résiduel	Oct 16Hz	Lin	dB	91,8	65,9	104,1	76,9	87,3
Point 3 Résiduel	Oct 31.5Hz	Lin	dB	90,4	69,3	101,8	76,2	85,2
Point 3 Résiduel	Oct 63Hz	Lin	dB	88,3	69,9	98,3	75,6	83,8
Point 3 Résiduel	Oct 125Hz	Lin	dB	86,2	62,7	96,4	71,8	81,3
Point 3 Résiduel	Oct 250Hz	Lin	dB	82,9	59	93,1	66,9	76,9
Point 3 Résiduel	Oct 500Hz	Lin	dB	76,5	53,5	88,1	59,4	68,9
Point 3 Résiduel	Oct 1kHz	Lin	dB	69,4	47,4	79,9	52,8	61
Point 3 Résiduel	Oct 2kHz	Lin	dB	70,1	42,1	82,1	48,1	57,5
Point 3 Résiduel	Oct 4kHz	Lin	dB	66,5	36,3	81,2	42,2	50,4
Point 3 Résiduel	Oct 8kHz	Lin	dB	50,7	30	66	34,7	43,1
Point 3 Résiduel	Oct 16kHz	Lin	dB	39,2	23	52,4	28,2	36,5



Point 3 Résiduel	Leq 1s	02/09/16 09:41:07	79,1dB	0h05m02	SEL	103,9dB
Point 3 Résiduel	Crête 1s		120,6dB		SEL	---



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