PROJECT TITLE	:	**KAPAL BCM (BANTU CAIR MINYAK) 4**
OWNER	:	**TENTARA NASIONAL INDONESIA – ANGKATAN LAUT (TNI-AL)**
BUYER / SHIPYARD	:	**PT. BATAMEC**
LOCATION	:	**BATAM, INDONESIA**
HULL NO.	:	**H7115**
VENDOR	:	**PT. TRAKINDO UTAMA SINGAPORE BRANCH**
SALES AGREEMENT NO.	:	**PO-BMC-H7115-001 (DATED 1 AUGUST 2020)**

4	**24/03/2021**	**FOR APPROVAL**	TWL	JS	NS	NS
3	**17/03/2021**	**FOR APPROVAL**	TWL	JS	NS	NS
2	**08/03/2021**	**FOR APPROVAL**	TWL	JS	NS	NS
1	**02/03/2021**	**FOR APPROVAL**	TWL	JS	NS	NS
0	**26/02/2021**	**FOR APPROVAL**	TWL	JS	NS	NS
Rev.	**Date**	**Description**	**Prepared**	**Checked**	**Approved**	**Authorized**

REVISION CONTROL SHEET

REV.	DATE	DESCRIPTION
0	26/02/2021	SUBMISSION FOR APPROVAL
1	02/03/2021	RESUBMISSION FOR APPROVAL
2	08/03/2021	RESUBMISSION FOR APPROVAL
3	17/03/2021	RESUBMISSION FOR APPROVAL
4	24/03/2021	RESUBMISSION FOR APPROVAL

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1.0 INTRODUCTION

The intent of this procedure is to define the objectives, scope, procedures and contents for the Caterpillar Factory Acceptance Test (FAT) Procedure for two (02) units of Caterpillar model C280-16 Marine Propulsion Engines. The FAT for these marine propulsion engines shall be carried out at Caterpillar's (Maker's) factory in USA immediately upon completion of the manufacture of the units, based on Maker's standard practice and test procedure, which is generally in line with customer's test requirements.

2.0 OBJECTIVE

The primary purpose of the testing of the Caterpillar model C280-16 Marine Propulsion engines is to demonstrate the mechanical and electrical integrity of the assembled engines which have already undergone factory's own pre-tests.

Specifically, the objectives of the Factory Acceptance Test are to establish the following:

- Perform standard Caterpillar factory dynamometer test to verify that the engines operate properly during the dyno test and all engine monitoring parameters are within Caterpillar's specification limits;
- Perform engine safety alarm and shutdown tests and verify that the results are within Caterpillar's specification limits;

3.0 SCOPE

The Caterpillar model C280-16 Marine Propulsion engines used for the Kapal Bantu Cair Minyak (BCM) 5500m3 + RAS (Replenishment At Sea) System TNI - AL project, are standard production engines from Caterpillar factory. Caterpillar has made arrangements for these engines to be set up at their factory test facility to carry out the factory test of these engines, based on Caterpillar's (Maker's) standard practice and procedure, which is generally in line with customer's test requirements.

Each of the Caterpillar model C280-16 Marine Propulsion engine shall be dyno tested up to Caterpillar's published rating at 5650 BKW, 7577 BHP, 1000 RPM.

The FAT shall be carried out for the complete assembled engines, and shall not include other accessories / auxiliary equipment (that are generally shipped loose), such as the Caterpillar Local Engine Control Panel, Barring Panel, Pre-heater Panel, Pre-lube Panel, heat exchangers, exhaust silencers, air receivers, etc.

The Caterpillar model C280-16 Marine Propulsion engines that are manufactured at Caterpillar factory are already in accordance to the Marine Classification Society (MCS) type approval under American Bureau of Shipping (ABS). ABS Surveyor is also engaged by Trakindo to witness the testing in the factory. In any case, Caterpillar will provide the

serial number specific ABS engine certification for each engine once available at a later time.

Due to current COVID-19 pandemic, the current FAT at Caterpillar factory in USA shall only be witnessed by all parties virtually via Microsoft Teams meeting.

4.0 MAIN ENGINE TESTS

4.1 TEST EQUIPMENT

The Factory Acceptance Test at Caterpillar factory shall take place using the following equipment:

- Two (02) units of Caterpillar model C280-16 Marine Propulsion engines, each rated at 5650 BKW,7577 BHP at 1000 RPM;
- Caterpillar factory's standard dynamometer test equipment, inclusive of all test controls and monitoring equipment (test cell calibration report shall be provided by Caterpillar);
- Clean piped diesel fuel that is available at Caterpillar factory;
- Clean engine oil available at Caterpillar factory for the run test of the engines;
- Caterpillar's standard cooling system, and other auxiliary equipment required for the dyno testing of both marine propulsion engines.
- Caterpillar's standard air starting, exhaust, lube oil, air intake systems, and other auxiliary equipment required for the dyno testing of both marine propulsion engines.

4.2 CUSTOMER VIRTUAL WITNESS TEST

There shall be two (02) units of the Caterpillar model C280-16 Marine Propulsion engines that shall be set-up and tested for customer to witness at the Caterpillar factory's test facility.

All test records shall be electronically recorded and shall be made available to the customer for review upon completion of all tests.

4.2.1 Pre-Test Inspection

A cursory visual inspection of the marine propulsion engine shall be allowed prior to the dyno tests of the two marine propulsion engines.

4.2.2 Engine Safety Alarm and Shutdown Tests

Up to 5 preselected engine safety alarm and shutdown tests shall be simulated for each engine, as follows:

a) High jacket water outlet temperature and low lube oil to engine pressure alarms shall be simulated under this test.

b) Overspeed shutdown shall be simulated by means of using an altered engine speed (to prevent damage to the engine). The engine overspeed shall be simulated at 75% of the engine overspeed setting, and not at the actual setting of 113% of the engine rated speed. No attempt will be made to alter the actual engine operating condition for the purpose of this test.
c) High jacket water temperature and low lube oil to engine pressure shutdowns shall be simulated under this test.

All test results shall be recorded accordingly.

4.2.3 Engine Dynamometer Tests

The marine propulsion engine dyno tests shall be witnessed by customer, with all results manually and electronically recorded. The following load steps shall be applied to each engine:

a) Engine shall be started and run to rated speed (1000 rpm) and held for a short duration (ie. about 1 to 2 minutes) to warm up the unit.
b) 15 mins of engine operation at 10% of the rated load (about 565 BKW)
c) 15 mins of engine operation at 50% of the rated load (about 2825 BKW)
d) 15 mins of engine operation at 75% of the rated load (about 4238 BKW)
e) 30 mins of engine operation at 85% of the rated load (about 4803 BKW) – Service load
f) 30 mins of engine operation at 100% of the rated load (about 5650 BKW) – Full load
g) 15 mins of engine operation at 110% of the rated load (about 6215 BKW);

The following data shall be recorded at 15 minutes interval for each dyno load steps of the engine:
- Observed fuel rate,
- Corrected specific fuel consumption,
- Observed and corrected engine power,
- Observed engine torque,
- Engine speed,
- Inlet air temperature, and
- Engine boost pressure.

Do note that for the above dyno tests, it is Caterpillar's intent to provide a continuous dyno load test without stoppage or interruption. However, if engine stoppage occurs for any reason other than engine failure (for example, dyno test equipment failure, or other Caterpillar's temporary test equipment failure), then the test shall be restarted from the point of stoppage (after sufficient warmup) and NOT from the beginning. Caterpillar's Test Engineer shall have the sole responsibility for determining the cause of any engine stoppage.

5.0 REVIEW AND ACCEPTANCE

Upon completion of the Caterpillar model C280-16 Marine Propulsion engine tests and inspections, all tests and inspection records shall be compiled and submitted to the customer for their review and acceptance.

On the successful or agreed conclusion of the Caterpillar model C280-16 Marine Propulsion engines, all tests and inspection records shall be signed by Trakindo and customer, and these shall be minuted down in the meeting minutes.

All test records made available shall be acknowledged via digital signature or via scanned signed documents, particularly, for all parties at Cat factory and Trakindo team outside of Indonesia.

ATTACHMENT A

Factory Acceptance Test Activity Schedule (At Caterpillar Factory)

VIRTUAL FACTORY ACCEPTANCE TEST ACTIVITY SCHEDULE (BANDUNG)

(Note that all times shown here are based on WIB time)

Day 1 – 29th March 2021 (Monday)

10.00 to 12.00 hrs - Arrive at Hotel in Bandung
12.00 to 13.45 hrs - Lunch Break
13.45 to 14.00 hrs - Gather at Hotel Meeting Room and Take Group Photo

FAT INTRODUCTION & DOCUMENTATION REVIEW

14.00 to 15.00 hrs - Trakindo introduction and general discussion
15.00 to 16.00 hrs - Team Introduction and Pre-FAT Briefing
16.00 to 17.00 hrs - Documentation Review for Factory testing of Cat C280-16 Marine Propulsion Engines – Unit 1 and Unit 2

- Engine FAT Procedure Review
a) Explain Engine Test Procedure

- Document Review
a) Cat Factory Test Sheet that needs to be filled shall be provided by Caterpillar / Trakindo
b) Test cell calibration report shall be provided by Caterpillar / Trakindo

- Equipment Check with Photos
a) Cat Factory Facility Photos, in front of CAT building and inside the Facility shall be shared prior to the engine FAT.
b) Clear photos of engines at different positions shall be shared prior to the engine FAT for Units 1 & 2
c) Clear photos of the Specific Engine Serial Number Nameplates shall be shared prior to the engine FAT
d) Clear photos of the dynamometer serial number nameplate and load test cell number shall be provided.

17.00 to 18.30 hrs - Dinner
18.30 to 23.59 hrs - Rest & Free Time

Day 2 – 30th March 2021 (Tuesday)

00.00 to 17.00 hrs - Rest & Free Time
17.00 to 18.30 hrs - Dinner
18.30 to 19.00 hrs - Gather at Hotel Meeting Room

DETAIL FAT PROCESS

19.00 to 19.15 hrs - Team Introduction
19.15 to 22.00 hrs - Factory testing of Cat C280-16 Marine Propulsion Engine – Unit 1, Engine S/N. 6M200100

- Detail Activities at Cat Factory
a) Engine Safety Alarm and Shutdown Tests for Engine S/N. 6M200100

- Engine Dynamometer Test for Engine S/N. 6M200100
a) Engine shall be started and run to rated speed (1000 rpm) and held for a short duration (ie:. about 1 to 2 minutes) to warm up the unit.
b) 15 mins of engine operation at 10% of the rated load (about 565 BKW)
c) 15 mins of engine operation at 50% of the rated load (about 2825 BKW)
d) 15 mins of engine operation at 75% of the rated load (about 4238 BKW)
e) 30 mins of engine operation at 85% of the rated load (about 4803 BKW) – Service load
f) 30 mins of engine operation at 100% of the rated load (about 5650 BKW) – Full load
g) 15 mins of engine operation at 110% of the rated load (about 6215 BKW);

The following data shall be recorded at 15 minutes interval for each dyno load steps of the engine:
- Observed fuel rate,
- Corrected specific fuel consumption,
- Observed and corrected engine power,
- Observed engine torque,
- Engine speed,
- Inlet air temperature, and
- Engine boost pressure.

22.00 to 23.00 hrs - Review Test Results, Q&A and Debrief
23.00 to 23.59 hrs - Rest & Free Time

OTHER ACTIVITIES AT CATERPILLAR FACTORY

a) Setting up of Cat C280-16 Marine Propulsion Engine – Unit 2, Engine S/N. 6M200102, at Cat factory test bay and preparation works.

Day 3 – 31st March 2021 (Wednesday)

00.00 to 17.00 hrs - Rest & Free Time
17.00 to 18.30 hrs - Dinner
18.30 to 19.00 hrs - Gather at Hotel Meeting Room

DETAIL FAT PROCESS

19.00 to 19.15 hrs - Team Introduction
19.15 to 22.00 hrs - Factory testing of Cat C280-16 Marine Propulsion Engine – Unit 2, Engine S/N. 6M200102

- Detail Activities at Cat Factory
a) Engine Safety Alarm and Shutdown Tests for Engine S/N. 6M200102

- Engine Dynamometer Test for Engine S/N. 6M200102
a) Engine shall be started and run to rated speed (1000 rpm) and held for a short duration (ie:. about 1 to 2 minutes) to warm up the unit.
b) 15 mins of engine operation at 10% of the rated load (about 565 BKW)
c) 15 mins of engine operation at 50% of the rated load (about 2825 BKW)
d) 15 mins of engine operation at 75% of the rated load (about 4238 BKW)
e) 30 mins of engine operation at 85% of the rated load (about 4803 BKW) – Service load
f) 30 mins of engine operation at 100% of the rated load (about 5650 BKW) – Full load
g) 15 mins of engine operation at 110% of the rated load (about 6215 BKW);

The following data shall be recorded at 15 minutes interval for each dyno load steps of the engine:
- Observed fuel rate,
- Corrected specific fuel consumption,
- Observed and corrected engine power,
- Observed engine torque,
- Engine speed,
- Inlet air temperature, and
- Engine boost pressure.

22.00 to 23.00 hrs - Review Test Results, Q&A and Debrief
23.00 to 23.59 hrs - Rest & Free Time

Day 4 – 1st April 2021 (Thursday)

00.00 to 12.00 hrs - Rest & Free Time
12.00 to 14.00 hrs - Lunch

FAT DOCUMENTATION REVIEW AND CLOSEOUT

14.00 to 14.15 hrs - Team Introduction
14.15 to 15.00 hrs - Review Test Results, Q&A and Debrief

- Detail Activities
a) Final review of all signed FAT documentation and photos from Cat factory
b) Clarification on any further queries with Cat Factory engineer, if required
c) Signing of all Test Documents together with the Factory Acceptance Test Certificate and Berita Acara by all Parties

15.00 to 15.30 hrs - Closing Remarks and Official end of FAT

15.30 to 17.00 hrs - Rest & Free Time
17.00 to 18.30 hrs - Dinner
18.30 to 23.59 hrs - Rest & Free Time

Day 5 – 2nd April 2021 (Friday)

00.00 to 09.30 hrs - Rest & Free Time
09.30 to 11.00 hrs - General discussion on Cat C280-16 Main Engines Application & Installation matters
11.00 to 14.00 hrs - Lunch
14.00 to 16.00 hrs - Contingency and Closeout

- Detail Activities
a) General discussion on any queries related to the Cat C280-16 Main Engines Application & Installation matters.
b) Other queries and clarifications
c) Contingency

16.00 to 17.00 hrs - Rest & Free Time
17.00 to 18.30 hrs - Dinner
18.30 to 23.59 hrs - Rest & Free Time

Day 6 – 3rd April 2021 (Saturday)

08.00 to 12.00 hrs - Free time and Check Out from Hotel

METRIC 604-6347

1. ALARM AND SHUTDOWN TEST

ALARMS:
JACKET WATER OUTLET TEMPERATURE HIGH
LUBE OIL TO ENGINE PRESSURE LOW

SHUTDOWNS:
ENGINE OVERSPEED - 75% ONLY
JACKET WATER TEMPERATURE HIGH
LUBE OIL TO ENGINE PRESSURE LOW

2. LOAD TEST - 2 HRS (DATA TO BE RECORDED AT 15 MIN INTERVALS)
ALL DATA TO BE ELECTRONICALLY RECORDED EXCEPT AS SHOWN IN THIS DRAWING
A) 15 MIN @ 10% RATED LOAD @ 1000 RPM
B) 15 MIN @ 50% RATED LOAD @ 1000 RPM
C) 15 MIN @ 75% RATED LOAD @ 1000 RPM
D) 30 MIN @ 85% RATED LOAD @ 1000 RPM
E) 30 MIN @ 100% RATED LOAD @ 1000 RPM
F) 15 MIN @ 110% RATED LOAD @ 1000 RPM (BOLLARD PULL)

THE FOLLOWING DATA WILL BE ELECTRONICALLY RECORDED AT EACH 15 MINUTE INTERVAL
OBSERVED FUEL RATE
CORRECTED SPECIFIC FUEL CONSUMPTION
OBSERVED AND CORRECTED POWER
OBSERVED TORQUE
ENGINE SPEED
INLET AIR TEMP
BOOST PRESSURE

3. TEST CELL CALIBRATION DATA

MATL		
HT TR		
	IE5167A	INT-PROP
	IE2966B	IDENT
	IE2722G	DRAWING
	IE0198W	BRAND MARKINGS
	IE0013Y	CONFIDENTIALITY
	IE0012A	INTERPRETATION
NOTE	IE0011	INTPR & TOL
	Caterpillar: Confidential Yellow	

PROD. | OTHER | CUSTOM PROD.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN mm
DIMENSIONS W/O TOL ARE BASIC

VERSION TYPE: PRIMARY X | SECONDARY

THIRD ANGLE PROJECTION

SHEET 1 OF 3

DWG CONTROL W853

CATERPILLAR

TEST-WITNESS
DYNO

604-6347 VER - CHG 00 B

METRIC 604-6347

GENERAL INFORMATION

CUSTOMER NAME _____
TEST DATE _____
ESO NUMBER _____

ENGINE DATA

ENGINE SERIAL NUMBER _____
ENGINE ARRANGEMENT _____
MODEL _____
ENGINE _____
ENGINE SETTING _____ BkW@ _____ RPM
OT, 2T, OR OK _____

TEST OPERATION DATA

TEST CELL _____
TEST CELL OPERATOR _____

MATL			
HT TR			
		IE5167A	INT-PROP
		IE2966B	IDENT
		IE2722G	DRAWING
		IE0198W	BRAND MARKINGS
		IE0013Y	CONFIDENTIALITY
		IE0012A	INTERPRETATION
NOTE		IE0011	INTPR & TOL
NOTE	Caterpillar: Confidential Yellow		
	PROD.	OTHER	CUSTOM PROD.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN mm
DIMENSIONS W/O TOL ARE BASIC

VERSION TYPE: PRIMARY X / SECONDARY

THIRD ANGLE PROJECTION

SHEET 2 OF 3
DWG CONTROL W853

CATERPILLAR

TEST-WITNESS
DYNO

604-6347 VER - CHG 00 B

ATTACHMENT B

Attendance Sheet

ATTENDANCE SHEET (FROM 29th MARCH TO 2nd APRIL 2021)

No.	Name	Designation	Organization	Sign
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

ATTACHMENT C

Caterpillar Model C280-16 Marine Propulsion Engines Safety Alarm and Shutdown Test Results

METRIC 604-6347

ALARM AND SHUTDOWN TEST

ALARM	SET POINT	RESULT
JACKET WATER OUTLET TEMPERATURE HIGH		
LUBE OIL TO ENGINE PRESSURE LOW		
SHUTDOWN	**SET POINT**	**RESULT**
ENGINE OVERSPEED - 75% ONLY		
JACKET WATER TEMPERATURE HIGH		
LUBE OIL TO ENGINE PRESSURE LOW		

MATL		
HT TR		
	IE5167A	INT-PROP
	IE2966B	IDENT
	IE2722G	DRAWING
	IE0198W	BRAND MARKINGS
	IE0013Y	CONFIDENTIALITY
	IE0012A	INTERPRETATION
NOTE	IE0011	INTPR & TOL

Caterpillar: Confidential Yellow

PROD. | OTHER CUSTOM PROD.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN mm
DIMENSIONS W/O TOL ARE BASIC

VERSION TYPE: PRIMARY X | SECONDARY

THIRD ANGLE PROJECTION

SHEET 3 OF 3

DWG CONTROL W853

CATERPILLAR

TEST-WITNESS

DYNO

604-6347 | VER - | CHG 00 | B

ATTACHMENT D

Caterpillar Model C280-16 Marine Propulsion Engines Dyno Test Results

11:09 Tue Jan 26 2021

CATERPILLAR INC. LARGE ENGINE CENTER DATA REPORT LAFAYETTE IN.
MANUAL MODE

OPERATOR	JOE D BALSER	ENGINE SPEC	5644130	ENGINE S/N	NK700103
TEST CELL	522	RACK SETTING	0.0	ENGINE MODEL	EE584
DATE	26-Jan-2021	TEST CODE NO	2	ENGINE ARR NO	5624581
RUN TIME	11:09:03	FUEL TYPE	DI	RECORD NO.	50
RUN NO.	3446	ECS TYPE	SCAC		

PERFORMANCE

SPEED	=	999	RPM	LEFT TURBO SPEED	=	27471	RPM
OBSERVED POWER	=	5466.6	KW	RIGHT TURBO SPEED	=	27583	RPM
CORRECTED POWER	=	5494.9	KW	N. COMBUSTION AIR	=	-318.5	KG/HR
OBSERVED TORQUE	=	52236	NM	S. COMBUSTION AIR	=	-151.9	KG/HR
OBSERVED FUEL RATE	=	19040.1	G/MIN	EJW FLOW	=	2162	LPM
ACCUMULATED FUEL	=	2357	GAL	ECM FUELING	=	295.00	MM^3
CORRECTED FUEL RATE	=	19056	G/MIN	SCAC FLOW	=	2463	LPM
CORRECTED FUEL CONS	=	208.1	G/KW-HR				

MEXA BENCH SELECTED

(THC) TTL HYDROCARBON	0	PPM	(CO2) CARBON DIOXIDE	0.00	%
(NOx) NITROGEN OXIDE	0	PPM	(NO) NITRIC OXIDE	0	PPM
(CO) CARBON MONOXIDE	0	PPM	(CH4) METHANE	0	PPM
(O2) OXYGEN	0.00	%			

PRESSURE

ENGINE FUEL	=	835	KPA	COOLING JET	=	469	KPA
SUPPLY FUEL	=	6	KPA	ENGINE WATER PUMP	=	271	KPA
OIL	=	476	KPA	SCAC PUMP	=	175	KPA
ENGINE TURBO BOOST	=	300	KPA				
SPECIAL PRESSURE 1	=	149.78	KPA	SPECIAL PRESSURE 2	=	0.01	KPA
SPECIAL PRESSURE 3	=	-31.87	KPA	SPECIAL PRESSURE 5	=	-0.19	KPA

TEMPERATURES

INLET EJW WATER	=	89	C
OUTLET EJW WATER	=	95	C
OIL	=	85	C
INLET FUEL	=	30	C
INLET MANIFOLD	=	43	C
INLET SCAC	=	32	C
OUTLET SCAC	=	47	C
RETURN FUEL	=	47	C
COMPRESSOR	=	188	C
AC EFFECTIVENESS	=	0.926	

EXHAUST PORTS

LEFT EXHAUST STACK	=	342	C					
RIGHT EXHAUST STACK	=	358	C					
2	=	424	C	1	=	433	C	
4	=	414	C	3	=	444	C	
6	=	420	C	5	=	421	C	
8	=	422	C	7	=	416	C	
10	=	411	C	9	=	436	C	
12	=	410	C	11	=	424	C	
14	=	398	C	13	=	402	C	
16	=	438	C	15	=	411	C	
LEFT EXH MANIFOLD	=	532	C					
RIGHT EXH MANIFOLD	=	526	C					

WEATHER CONDITIONS

BAROMETER	=	98.2	KPA	INLET AIR	=	26	C
DRY BAROMETER	=	97.4	KPA	INLET RESTRICTION	=	-0.5	KPA
DEW POINT	=	3.1	C	AMBIENT AIR	=	18	C
HUMIDITY	=	33.978	GRAIN/LBM	CORRECTION FACTOR	=	1.0050	
FUEL DENSITY	=	35.2	API				

ATTACHMENT E

Factory Acceptance Test Certificate for Caterpillar Model C280-16 Marine Propulsion Engines At Caterpillar Factory, USA

FACTORY ACCEPTANCE TEST CERTIFICATE FOR CATERPILLAR MODEL C280-16 MARINE PROPULSION ENGINES AT CATERPILLAR FACTORY, USA

MARINE PROPULSION ENGINES – 2 UNITS OF CATERPILLAR MODEL C280-16

PROJECT	:	KAPAL BANTU CAIR MINYAK (BCM #4)
OWNER	:	TENTARA NASIONAL INDONESIA ANGKATAN LAUT (TNI-AL)
BUYER/SHIPYARD	:	PT. BATAMEC
PROJECT NO.	:	H7115
TEST LOCATION	:	Caterpillar, Inc. 3701 South St Lafayette, Indiana 47905, USA
TESTING DATES	:	29th March to 2nd April 2021

This is to certify that the Factory Acceptance Test has been successfully completed for the following equipment:

2 units of Marine Propulsion Engines - Caterpillar model C280-16, rated at 5650 BKW, 7577 BHP @1000 RPM, Engine Serial Numbers 6M200100 & 6M200102

CONDUCTING PARTY REPRESENTATIVE

WILLIAM STOVALL / CATERPILLAR, INC

WITNESSING PARTY AT CATERPILLAR FACTORY

PAUL BEATTIE / AMERICAN BUREAU OF SHIPPING

VIRTUAL WITNESSING PARTIES (FROM BANDUNG)

PT. TRAKINDO UTAMA

PT. BATAMEC

TNI-AL