



# Pre Incident



PRODUCT SERVICE REPORT  
NORTHROP GRUMMAN SPERRY MARINE

PSR#: 0771794

Vessel Name: <b>COSCO BUSAN</b>	Model/Type	Call Sign	<input checked="" type="checkbox"/> Normal Charge <input type="checkbox"/> Service <input type="checkbox"/> Installation <input type="checkbox"/> Maintenance Contract	<input type="checkbox"/> Warranty <input type="checkbox"/> Product Warranty <input type="checkbox"/> Service Warranty
Owner Company Name	Port of Call <b>LONG BEACH</b>	Date of Service <b>11-05-2007</b>		
Service Req. # <b>18744</b>	Service Station Name / #			
Equipment Type <b>RADAR</b>	Model <b>EME X-BAND</b>	Software Version		
Serial Number	Location of Serial Number	Rev.	OEM?	

Problem Description  
**LOW VIDEO**

Report  
**REPORTED TO VESSEL AND FOUND RADAR NOT OPERATIONAL. RADAR DIDN'T ROTATE. CLIMBED TO MAST AND SWITCHED TURNING UNIT ON. TESTED RADAR AND STILL HAD SAME FAULT. OPENED TURNING UNIT NOTICE LOOSE CONNECTION TO MOTOR AND POWER. TIGHTENED ALL 2 CONNECTIONS. RETURNED DOWN AND TEST RADAR. ANTENNA NOW TURNING BUT NO TARGETS AND VERY LOW MAG I. OPENED TRANSCEIVER FOUND MAGNETRON LEADS INVERTED. TESTED RADAR BUT STILL LOW MAG I. REPLACED MAGNETRON TARGETS ARE NOW VISIBLE BUT LOW MAG I. TRIED TO ADJUST MAG I BUT MODULATOR ONLY GOES UP TO 13V. SUSPECT BAP MODULATOR REPLACE MODULATOR AND ADJUST MAG I. TEST RADAR MAG I IS NOW PROPER TARGETS ARE OPTIMAL AT ALL RANGES. ASSISTED BY MSE MARTELL**

Fault Confirmed? <b>Y</b>	Fault Intermittent? <b>N</b>	Fault Repaired? <b>Y</b>	Follow-up Required? <b>N</b>	Job Complete? <b>Y</b>	Next Port	ETA
Nature of Service / Fault Code / Codes <b>PCB</b>		Engineer Name <b>RAYMONDI</b>	Engineer Code <b>17860</b>	Engineer Signature <i>[Signature]</i>		

MATERIAL SUPPLIED					MATERIAL REMOVED									
QTY	PART NUMBER	REV	DESCRIPTION	SERIAL NO.	✓	✓	✓	✓	✓	SERIAL NO.	✓	✓	✓	✓
01	T65825812-3		MODULATOR	010	✓									
61	T91003498-2		MAGNETRON	0021503	✓					LEFT ON DB.				✓

LABOR							EXPENSES			CUSTOMER ACCEPTANCE							
DATE	ENG CODE	ENG INIT	TRAVEL ST OT	ONBOARD ST OT	IN OFFICE ST OT	WAITING ST OT	MILES	TELEPHONE	HOTEL	MEALS	ALTO	AIR FOLDS	MISC	TTL EXP	TTL LABOR	TTL MATL	TTL PSR
11/05	17860	IR	1	4.5			35										

THE WORK DESCRIBED ABOVE HAS BEEN CARRIED OUT TO MY SATISFACTION

PRINT NAME: **SUN HAO CHAI**  
TITLE: **MASTER**  
SIGN: *[Signature]*

COMMENTS: **Subject to owners T/Co approval**

M.V. COSCO BUSAN

SHIP'S STAMP

**MASTER**

THANK YOU FOR USING SPERRY MARINE ServiceNet

BME X-BAND

RSP0049R  
01/30/08

System PSR's - All  
1970-01-01 thru 2008-01-30

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14:52:33

Ship: COSCO BUSAN  
PCC : D05 - BME 340 (DECCA)

Ship No: 36645893  
Sys No : 46140813

System Text: BME X-BAND  
Mod Code:

Serial: 2793  
Rel Lv:

Serial Loc: DISPLAY  
Sys Status: N

PSR: 759765      Type: C    SSC: SEATTLE      MSE: TAYLOR      Dt: 07-11-12  
PSR Entry Dt: 07-11-14

Ship# 36645893

(VERIFY OPERATION) BOTH GYROS PROVIDING GOOD DATA TO VMS AND RADAR. GYRO SELECTABLE AT VMS OR AT COMPASS MONITOR GYROS WITH IN POINT 2 DEGREES OF EACH OTHER. NO ALARMS AND ARE OPERATING CORECTTLY COURSE RECORDER PRINTING HEADING AND RUDDER INFORMATION CORRECTLY.

PSR: 759761      Type: C    SSC: SEATTLE      MSE: TAYLOR      Dt: 07-11-12  
PSR Entry Dt: 07-11-14

Ship# 36645893

(VERIFY OPERATION) CHECKED RADAR ON ALL SCALES OK GOOD RADAR TARGET VIDEO AND PRESENTATION. ABLE TO AQUIRER AND TRACK TARGETS. RECEIVING ALARMS WHEN LOSING TARGETS OF CPA ALARMS. VERIFIED BEARING AND RANGE OF 3 DIFFERENT TARGETS IN DIFFERENT QUADRENTS OK. BOTH RADARS PAINTING TARGETS IN SAME LOCATION. WAS ABLE TO SEE BRIDGE RACON BEACONS. RADAR HAVE GOOD GYRO DATA AND POSITION DATA FROM VMS, PERFORMED SYSTEM BUT TEST MAGNETRON CURRENT 5.3AMP H/V 552 VOLTS 30 VOLT SUPPLY=30.7 AND 12 VOLT=12.2 VOLTS. BIST TEST PASSES. RADAR OFFSET=356.5 .RIG D ELAY 65. BRIDGE HEADING AND RANGE WITH HEADING OF VESSEL=151DEG. 3.89MM BEARING 338.1 RADAR OPERATING CORRECTLY AT THIS TIME.

PSR: 771794      Type: C    SSC: LONG BEACH      MSE: RAYMONDI      Dt: 07-11-05  
PSR Entry Dt: 07-11-07

Ship# 36645893

(LOW VIDEO) REPORTED TO VESSEL AND FOUND RADAR NOT OPERATIONAL. RADAR DIDN'T ROTATE. CLIMBED TO MAST AND SWITCHED TURNING UNIT ON. TESTED RADAR AND STILL HAD SAME FAULT. OPENED TURNING UNIT NOTICE LOOSE CONNECTION. RETURNED DOWN ND TEST RADAR. ANTENNA NOW TURNS PUT NO TARGETS AND VERY LOW MAGI. OPENED TRANSRECIIVER FOUND MAGNETRON LEADS INVERTED. TESTED RADAR BUT STILL LOW MAGI. REPLACED MAGNETRON TARGETS ARE NOW VISIBLE BUT LOW MAGI. TRIED TO ADJUST MAGI BUT MODULATOR ONLY GOES UP TO 1.3V. SUSPECT BADMODULATOR REPLACE MODULATOR AND ADJUST MAGI.TEST RADAR MAGI IS NOW PROPER TARGETS ARE OPTIMAL AT ALL RANGES. ASSISTED BY MSE MARTELL.

PSR: 732922      Type: C    SSC: ROTTERDAM      MSE: BUTER      Dt: 06-05-20  
PSR Entry Dt: 06-08-03

Ship# 36645893

X-BAND CHECKED EQUIPMENT. FOUND MAGNETRON CURRENT LOW. REPLACED MAGNETRON. SET OUTPUT. TUNED RX. LINED UP PROCESSOR UNIT. RADAR WORKING NORMALLY.

PSR: 563642      Type: C    SSC: KOREA      MSE: KOREA AGENT      Dt: 03-05-21  
PSR Entry Dt: 03-06-06

Ship# 36645893

BOARD VESSEL. CHECKED DISPLAY AND ELECTRONICS UNIT-NORMAL. ACCORIDNG

Ship: COSCO BUSAN  
PCC : D05 - BME 340 (DECCA)

Ship No: 36645893  
Sys No : 46140813

TO CAPTAIN SOMETIMES DISCOLORED ON RADAR DISPLAY AND ALSO THE PICTURE ON THE PPI ARE DEFORMED. CONNECTED CABLE (GROUND) BETWEEN CRT MOITOR AND CONSOL IN SIDE CONSOLE CABINET. WATCHED CLOSELY DURING THREE HOURS BUT PROBLEM WAS NOT DISCOVERED. PLEASE CHECK AGAIN DURING DURING TIME.

PSR: 623713 Type: C SSC: HAMBURG

MSE: SCHULZ

Dt: 03-04-24

PSR Entry Dt: 03-08-06

Ship# 36645893

CHECKED SYSTEM AND FOUND FAULT AS DESCRIBED. DISMANTLED COVER PLATES AND CHECKED SUB-D CONNECTIONS TO JOYSTICK AND KEYBOARD. FOUND BAD CONTACT AT SUB D PLUG FOR JOYSTICK. DISMANTLED OR RE-ASSEMBLED SUB D-PLUGS. CHECKED SYSTEM AGAIN AND FOUND LATELY ORDERLY. DISMANTLED COVERPLATES FROM DISPLAY UNIT AND ADJUSTED FOR MAX PUT BRIGHTNESS TO ITS MAXIMUM VALVE AND CHECKED SYSTEM AGAIN. CLOSED ALL COVERPLATES AND LEFT SYSTEM IN GOOD WORKING ORDER.

PSR: 563811 Type: C SSC: KOREA

MSE: KOREA AGENT Dt: 02-11-09

PSR Entry Dt: 02-11-11

Ship# 36645893

CLAIM NO #D-057-ONBOARD CHECKED RADAR DISPLAY THEN FOUND OUT THAT BOTH PPI IS JUST ALMOST CIRCLE BUT CRUSHED DISPLAYING LETTERS IN FOUR CONER SIDE. ADJUSTED BOTH RADAR DISPLAYS BY USING EDL CALIBRATION KEYPAD DEVICE. CARRIED OUT BEST CALIBRATION BUT STILL A LITTLE BIT CRUSHED DISPLAYING GRAPHIC IN CONVER SIDE.

PSR: 6073041 Type: W SSC: VLAARDINGEN

MSE: MUL

Dt: 02-01-14

PSR Entry Dt: 02-02-18

Ship# 36645893

BME X-BAND-TESTED RADAR AND CHECKED DISPLAY. FOUND DISTORTED PICTURE AND FADING IN BRILLIANCE. DISPLAY MUST BE RENEWED. INFO TO HEAD OFFICE.

PSR: 563312 Type: I SSC: KOREA

MSE: KOREA AGENT Dt: 01-12-19

PSR Entry Dt: 02-05-03

Ship# 36645893

INSTALLED BRIDGEMASTER X-BAND RADAR SYSTEM WITH INTERSWITCH UNIT. CHECKED AND CONNECTED POWER AND IN/OUT SIGNAL CABLES. CARRIED OUT INITIAL SETTING IN BOTH RADARS AND ALSO CHECKED OPERATION FUNCTION IN BOTH RADARS. RECEIVED CLASS AND OWNER'S INSPECTION AND ALSO CARRIED OUT DEMONSTRATION TO SHIP'S OFFICERS FOR OPERATION OF EQUIPMENT.

# S-Band Post Incident

SEMINOLE WAREHOUSE CHARLOTTEVILLE VA 22611 30118000 02 000



## PRODUCT SERVICE REPORT NORTHROP GRUMMAN SPERRY MARINE

PSR#: 759761

Vessel Name <b>COSCO BUSAN</b>		IMO Number <b>9231743</b>		Call Sign <b>YR016</b>		<input type="checkbox"/> Normal Charge		<input type="checkbox"/> Warranty															
Owner/Company Name		Port of Call <b>OAKLAND, CA</b>		Date of Service <b>12-NOV-07</b>		<input type="checkbox"/> Service		<input type="checkbox"/> Product Warranty															
Service Req. # <b>98880</b>		Service Station Name / # <b>LS1860</b>				<input type="checkbox"/> Installation		<input type="checkbox"/> Service Warranty															
Equipment Type <b>RADAR</b>		MSDN <b>BRIDLEMASTER VT S-BAND</b>		Software Version <b>V3.04</b>		<input type="checkbox"/> Maintenance Contract																	
Serial Number		Location of Serial Number		Flw		DEM?																	
Problem Description <b>VERIFY OPERATION</b>																							
Report <b>CHECKED RADAR ON ALL SCALES OK. GOOD RADAR TARGET VIDEO AND PRESENTATION. ABLE TO ACQUIRE AND TRACK TARGETS RECEIVING ALARMS WHEN LOSING TARGETS OR CPA ALARMS. VERIFIED BEARING AND RANGE OF 3 DIFFERENT TARGETS IN DIFFERENT QUADRANTS OK. BOTH RADARS PAINTING TARGETS IN SAME LOCATION. WAS ABLE TO SEE BRIDLE RACON BEACONS. RADAR HAVE GOOD GYRO DATA AND POSITION DATA FROM VMS. PERFORMED SYSTEM BIST TEST MAGNETRON CURRENT 5.3 AMP HV 552 VOLTS 30 VOLT SUPPLY = 30.7 AND 12 VOLT = 12.2 VOLTS. BIST TEST PASSES. RADAR OFFSET = 356.5 TRIG DELAY 65. BRIDLE HEADING AND RANGE WITH HEADING OF VESSEL = 151° RANGE 3.89 NM BEARING 338.1 RADAR OPERATING CORRECTLY AT THIS TIME</b>																							
<table border="1"> <tr> <td>Fault Confirmed?</td> <td>Root Information?</td> <td>Fault Repaired?</td> <td>Follow-up Required?</td> <td>Job Completed?</td> <td>Next Port</td> <td>ETA</td> </tr> <tr> <td><b>NO</b></td> <td><b>NO</b></td> <td><b>YES</b></td> <td><b>NO</b></td> <td><b>YES</b></td> <td></td> <td></td> </tr> </table>										Fault Confirmed?	Root Information?	Fault Repaired?	Follow-up Required?	Job Completed?	Next Port	ETA	<b>NO</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>	<b>YES</b>		
Fault Confirmed?	Root Information?	Fault Repaired?	Follow-up Required?	Job Completed?	Next Port	ETA																	
<b>NO</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>	<b>YES</b>																			
Nature of Service (Fault Code/Context) <b>3UR</b>		Engineer Name <b>CLESTER A TAYLOR</b>		Engineer Dog # <b>11670</b>		Engineer Signature <i>[Signature]</i>																	
MATERIAL SUPPLIED					MATERIAL REMOVED																		
QTY	WARRANT NUMBER	REV	DESCRIPTION	SERIAL NO.	IN	OUT	IN	OUT	SERIAL NO.														
LABOR			EXPENSES				CUSTOMER ACCEPTANCE																
DATE	ENG CODE	ENG INIT	TRAVEL ST OT	ONBOARD ST OT	IN OFFICE ST OT	WAITING ST OT	MILES	THE WORK DESCRIBED ABOVE HAS BEEN CARRIED OUT TO MY SATISFACTION															
							TELEPHONE	PRINT NAME: <b>SUN MING COI</b>															
							HOTEL	TITLE: <b>CAPTAIN</b>															
							MEALS	SIGN: <i>[Signature]</i>															
							AUTO	COMMENTS:															
							AIR	NORTHROP GRUMMAN Sperry Marine CM Taylor FCC# DE68057821															
							TOLLS	SHIP'S STAMP <b>M.V. COSCO BUSAN</b>															
							MISC																
							TTL EXP																
							TTL LABOR	THANK YOU FOR USING SPERRY MARINE															
							TTL MATL	<b>ServiceNet</b>															
							TTL PSR																

HEADQUARTERS: SPERRY MARINE • 1070 SEMINOLE TRAIL • CHARLOTTEVILLE, VA 22601-2481 USA (834) 074-2100  
ATTENTION: TERMS AND CONDITIONS ON REVERSE SIDE

J 8214-4

REGIONAL OFFICE

BME-E S-Band

RSP0049R  
01/30/08

System PSR's - All  
1970-01-01 thru 2008-01-30

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Ship: COSCO BUSAN  
PCC : D05 - BME 340 (DECCA)

Ship No: 36645893  
Sys No : 90491652

System Text: BME S-BAND  
Mod Code:

Serial: 2799  
Rel Lv:

Serial Loc: DISPLAY  
Sys Status: N

PSR: 759763      Type: C    SSC: SEATTLE      MSE: TAYLOR      Dt: 07-11-12  
PSR Entry Dt: 07-11-14

Ship# 36645893

(VERIFY OPERATION) VMS DISPLAYING CORRECT CHART. VMS  
CONSIST OF 3 NODES, VM1 (NAV) VM2 (CONNING) AND VM3 (PLANNING) ALL  
STATIONS HAVE GOOD DATA. BOTH GYRO DATA AVAILABLE AND SELECTABLE. ALSO  
BOTH GPS DATA AVAILABLE AND SELECTABLE. VMS PROVIDING RADAR WITH  
GOOD POSITION DATA. ALL SENSORS WORKING. USING PLAYBACK INCIDENT  
RECORDED AT 1629 (VTC) HEADING WAS 315.3 AT 10.5 KTS ZERO COMPUTED SET  
AND DRIFT WIND 2.8 KNOTS. DEPTH 9.9 METER POSITION 37.47.992 N 122.22.355  
W NOV-7-2007. MADE COPY OF 7-NOV-2007 DATA LOG ON 5 FLOPPIES SHUT DOWN AND  
RESTARTED NODE 1 AND 2 WITHOUT ERROR. ALL NODES SHOW CONNECTED IN SYSTEM  
DIAGNOSTICS. WILL PROVIDE VMS DATA LOG TO BRAIN OPERATIONAL

PSR: 771752      Type: C    SSC: LONG BEACH      MSE: RAYMONDI      Dt: 07-07-17  
PSR Entry Dt: 07-08-02

Ship# 36645893

REPORTED TO VESSEL FOUND RADAR DISPLAYING POOR TARGETS WIHT AUTO  
TUNE STUCK AT MID POSITON. PROCEEDED ONBOARD WITHSPARE RECIEVER AND  
MODULAROR. SUSPECT BAD RECEIVER CAUSING AUTO TUNE TO STICK. REPLACED  
RECIEVER AND TESTED RADAR. POOR TARGETS REMAIN BUT AUTO TUNE NOW AT  
MAX STRENGTH. PROCEEDED TO REPLACE MODULATOR . ADJUSTED MAG I CURRENT  
AND TESTED RADAR. FAULT REMAINED TESTED ALL VOLTAGES ON PWR SUPPLY.  
ALL CHECKED GOOD. CLIMBED UPSTAURS TO MAST TO INSPECT ANTENNA. OPENED IT  
AND FOUND SMALL SIGNS OF WATER INTRUSION AND RUST. CHECKED ARRAY,  
SHOWS SIN GS OF DETERIORATION, ABLE TO SEE TO THE INSIDE OF ARRAY.  
SUSPECT BAD TURNING UNIT. CAUSES POOR TARGETS AT GREATER RANGES.  
RECIEVER WILL BE LEFT INSTALLED SINCE IT FIXED AUTO PROBLEM. TOOK  
MODULATOR OUT AND REPLACED IT WIHT ORIGINAL PART.

PSR: 771751      Type: C    SSC: LONG BEACH      MSE: RAYMONDI      Dt: 07-07-14  
PSR Entry Dt: 07-08-02

Ship# 36645893

REPORTED TO VESSEL AND FOUNDN S-BAND WITH WEAK TARGETS. PAPERWORK REPORTED  
X-BAND PROBLEMS. BROUGHT ON BOARD X-BAND PARTS. WILL RETURN LATER INTHE  
DAY WIHT S BAND SPARE PARTS. RETURNED IN THE WIHT S-BAND SPARE PARTS.  
RETURNED WITH SPARE MAGNETRON. CHECKED RADAR IN TRANSMIT FOUND  
TUNING TO BE STUCK AT MID POSITION. PROCEEDED SINGLE 2003. TESTED RADAR  
FAULT REMAINED, WILL SCHEDULE FOLLOWUP SERVICE IN OAKLAND SINCE  
RECEIVR IS NOT AVAILABLE.

PSR: 7329221      Type: C    SSC: ROTTERDAM      MSE: BUTER      Dt: 06-05-20  
PSR Entry Dt: 06-08-03

Ship# 36645893

S-BAND PERFORMANCE MONITOR NOT INDICATING. SUSPECT AERIAL. NO SPARE  
AVAILABLE.

PSR: 621742      Type: C    SSC: NEWCASTLE      MSE: GREAT BRITAI Dt: 03-12-06

RSP0049R  
01/30/08

System PSR's - All  
1970-01-01 thru 2008-01-30

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Ship: COSCO BUSAN  
PCC : D05 - BME 340 (DECCA)

Ship No: 36645893  
Sys No : 90491652

PSR Entry Dt: 04-01-22

Ship# 36645893

REPLACED SCANENR ARRAY. TEST RUN OK. OLD SCANNER LANDED ASHORE FOR RETURN TO LONDON VIA AGENT.

PSR: 5638111 Type: C SSC: KOREA

MSE: KOREA AGENT Dt: 02-11-09

PSR Entry Dt: 02-11-11

Ship# 36645893

CHECKED ARPA TRACKING CONDITION IN S-BAND WITH X-BAND BUT NEVER NO FAULT OBSERVED AS SITUATION OF CLAIN NO #D-060. RE-ADJUSTED COURSE TUNE AND VIDEO I/P AND FOUND BOTH RADARS WORKING NORMALLY. WATCHED ABOUT THREE HOURS BUT NEVER OBSERVED THIS FAULT.

PSR: 5633121 Type: I SSC: KOREA

MSE: KOREA AGENT Dt: 01-12-19

PSR Entry Dt: 02-05-03

Ship# 36645893

INSTALLED BRIDGEMSTER E S-BAND RADAR SYSTEM WITH INTERSWITCH UNIT. CHECKED AND CONNECTED POWER AND IN/OUT SIGNAL CABLES. CARRIED OUT INITIAL SETTING IN BOTH RADARS AND ALSO CHECKED OPERATION OF FUNCTION IN BOTH RADARS. RECEIVED CLASS AND OWNER'S INSPECTION AND ALSO CARRIED OUT DEMONSTRATION TO SHIP'S OFFICERS FOR OPERATION OF EQUIPMENT.