

THE ASSIST

June 1998

Issue No. 12

**** Serving the RAST Fleet ****

A WORD FROM THE RAST FLEET LIAISON



On a recent visit to SIMA Portsmouth, I had an opportunity to talk with some of the technicians involved with RSD overhaul. These people are great! I don't know whether you know it or not, but these guys are more than willing to help anybody who asks for troubleshooting help on their RSDs or other RAST components.

However, they are not supply! Some of you are under the impression that SIMA has shelves filled with parts to go. I'm sure they wish they had it that way, however, the fact of the matter is they barely have enough parts for themselves to perform overhauls. So, in short, do not be afraid to ask for help but please

leave the parts out of the conversation!

Appreciate the feedback forms I have received from some of you RAST techs (like EN2 (SW) Lee and EM2 Baker aboard REUBEN JAMES). Keep 'em coming.

Well that's it for now. Until next time, take care.

EN2 Rob Bachand

Internet Access!!

We have finally worked out the bugs of getting past issues of this newsletter on the Navy Lakehurst Home Page. You can now find issues no. 4 through 11 (July '95 - present) at:

www.lakehurst.navy.mil/rast

This is recommended reading for all RAST techs. All of the maintenance tips and general information in the back issues can be just as helpful today.

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Words from the ASIR East Office

This article is being written in response to a request from the Lakehurst design guys who said that they would like to publish some of the problems or more interesting things that we see daily. With that in mind I asked the RAST Inspectors in the office to come up with a list of things that would be appropriate.

Before I get to their list I would like to inform the fleet about an inspection that our office does prior to your ship going into an availability. This inspection (called a Pre-Availability Technical Assist or PATA) will document discrepancies that you, SIMA, or an industrial activity (Shipyard) need to correct before the ASIR comes back to certify your system. Your squadron schedules these inspections with input from the ship.

I recommend that when you, the RAST technician get wind of this inspection you conduct a self survey. Ask yourself what items do I need help correcting? Like a leaking RA pump/motor shaft seal, changing out your RSDs, replacing your traverse cables. You know, the big things that you just can't do without help. Screen out the ones like clean and lubricate the RSD, and replace all filters on the WHPU. Those are YOUR responsibility. They fall into the category of PMS, and yes I did say it, PMS. It's just a fact; you have to do it.

Now with your items and what we found on the PATA we start writing "2 Kilo's". These 2 Kilo's are then uploaded into the ship's CSMP by the 3MC. After that the port engineer gets a wack at them. He may screen some back to ship's force but that's OK because now at least you know the problems. They are documented and you can plan for correction.

Tips to keep your system up and running:

(1) If you do not have power in the tailguide to port or starboard modes from remote, try this first: Turn the power on. Just kidding. Take a look at TGW solenoid No. 1. (IPB at figure 136-64). Make sure that the solenoid portion of this valve is clean. You may have to remove the small nut from the top of the shiny thing (that's the solenoid) pull it off of the valve body and clean it with some "emery paper". Lubricate this portion with the Navy equivalent of WD-40 and reinstall. Please remember that this tip is not a bypass for the tech manual troubleshooting procedures.

(2) We are still seeing badly corroded traverse cables. These cables require semi-annual lubrication with Pre Lube 19 IAW MRC 4926 S-8.

(3) The MSA on most ships are starting to show their age. We are seeing the switches corroded, load cells stuck and out of adjustment, and overall corrosion to be a major delay of the certification process. Get to these items before they become a problem.

We could come up with a list of hundreds of things that could help you keep the RAST system going, but if you do not pay attention to any of them we are wasting our time. So remember: "The difference between a successful person and others is not a lack of strength, not a lack knowledge, but rather in a lack of will." (Vince Lombardi)

As always, if you have an Aviation related problem contact your local ASIR or the Lakehurst in-service engineers/logisticians . Our goal is to provide you with the assistance you need to keep your RAST system in top shape.

Submitted by,

Bill Barnett (ASIR-Norfolk)

ASIR, Norfolk, VA.

NAWC Lakehurst RAST Points of Contact

<u>NAME</u>	<u>TITLE</u>	<u>PHONE</u>	<u>CODE</u>
DAVE HOFFMAN	RAST IN-SERVICE ENGR'ING TEAM LEADER	-1602	4.8.10.2
EARL BURROWS	RAST/ATS MECHANICAL ENGINEER	-1599	4.8.10.2
MARC FRIEDMAN	RAST MECHANICAL ENGINEER	-1603	4.8.10.2
DAVE LEUNG	RAST MECHANICAL ENGINEER	-1597	4.8.10.2
JIM OXLEY	RAST MECHANICAL ENGINEER	-1168	4.8.10.2
MITCH FRIEDMAN	RAST ELECTRICAL ENGINEER	-1169	4.8.10.2
JIM JOYCE	HLS LOGISTICIAN	-1801	3.2.4.2
DAVE WALTER	HLS LOGISTICIAN	-1817	3.1.4.1
RAY MARTIN	ACS / AMPHIB. CONFIGURATION	-1810	4.8.5.2
WAYNE KOVACS	HLS PROGRAM MANAGER	-2730	1.1.X.6.2.4
EN2 ROB BACHAND	RAST FLEET LIAISON	-1813	4.8.10.5

Comm. phone: (732) 323- DSN: 624- FAX: -7232 E-MAIL: BACHANDRP@NAVAIR.NAVY.MIL

Tip of the Quarter - RSD Marotta Valve Adjustment

EN2 Callahan (SIMA-Portsmouth) wanted to pass on a few important items. In the fleet, many technicians have attempted to adjust the RSD Control Valve Assembly, otherwise known as the Marotta Valve, when experiencing cycling problems (e.g. sluggish beam movement or inability to achieve 4 cycles manually).

Please do not adjust the control valves!!!!

If you have determined that the valve assembly is at fault, follow the change out procedures in accordance with paragraph 6-145 in the OMI. These valves are very difficult to adjust. At SIMA, they are tested by the use of two test stands. The first is used to examine each individual valve performance separately, i.e. leaks. After all three valves test successfully, they are assembled together as one unit and placed on the second stand. The Control Valve Assembly is then tuned to the cam shaft, (brake, open, close), and checked for leaks again.

Also, before you assume you have a bad Marotta Valve, be sure you follow the appropriate troubleshooting sections in chapter 5 of the OMI.

If you are experiencing cycling problems,

here are some common items that should be looked at: Be sure you have proper cable tension, (OMI, para 5-4.20.2). Make sure the accumulator is functioning properly, (5-4.16.1). Check the unlatch bar actuator for proper adjustment, (6-159.c(6) through 6-159.d(35)). Lastly, check the beam roller shim clearance, (.005 to .010") IAW LRB11, DTG 040902Z SEP 96.

Submitted by:

EN2 Rob Bachand

“THE ASSIST” is an unclassified, quarterly publication issued by the RAST team of the Recovery Branch, SE/ALRE In-Service Engineering Division, Engineering Group - Naval Air Warfare Center, Aircraft Division, Lakehurst, New Jersey.

The information herein is unofficial and is provided to assist the RAST community in the operation and maintenance of the RAST system.

We have distributed twelve (12) newsletters covering a wide range of RAST maintenance tips, technical guidance, supply and logistical info, status of on-going system upgrades, RAST historical background, survey feedback, and answers to your various questions - 54 articles in all. An index of all published articles is listed below:

- | | |
|--------------------------|--|
| Issue No. 1
(Jul '94) | <ol style="list-style-type: none"> 1. Word from the Fleet Liaison - Introduction 2. LRC No. 57 Introduces “-14” RSDs 3. RAST RA CAL Kit Survey Results 4. Tip of the Quarter - Proper Servicing of the RSD Accumulator |
| Issue No. 2
(Jan '95) | <ol style="list-style-type: none"> 1. Maintenance Tip: Cycle Your Equipment 2. RSD Electric Cables 3. ECA Fuses 4. Tip of the Quarter - Proper Servicing of the Rope Accumulator 5. Word from the Fleet Liaison - Documenting System Maintenance |
| Issue No. 3
(Apr '95) | <ol style="list-style-type: none"> 1. Your RAST System’s Biggest Threat - Hydraulic System Contamination 2. On the Horizon - A look at the Ongoing Efforts to Improve the System: <ul style="list-style-type: none"> *RSD Block II Upgrade, Flexible RSD Electric Cable, Electric Cable Passing Tube *Elimination of ECR and Gutters 3. Tip of the Quarter - How to Avoid Electric Cable & Gutter Problems 4. Word from the Fleet Liaison - RSD Electric Cable Failures |

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- Issue No. 4
(Jul '95)
1. How do you Gage a Failure? - RSD Pressure Gage Failures
 2. Touch and Go - Track Plate Lifting Tool and TGW Pump Bearing Failure
 3. Keeping RAST Systems Up and Running
 4. Word from the Fleet Liaison - CASREPs and CASCORs
- Issue No. 5
(Nov '95)
1. Stripped Marotta Valve Threads
 2. Everything You Ever Wanted to Know About Traverse Cable Lube
 3. Maintenance Review Conference for RAST System
 4. Listing of Latest HLS Tech Manuals
- Issue No. 6
(Mar '96)
1. How Big is Your Connector? - Changing RA Cables
 2. RAST AVCERT Preparations
 3. RSD Turn-In Procedure
 4. HRS ISD and Lamp Bar Turn-In Procedures
 5. Touch and Go - Protecting RAST During SRAs and Smoking Prelube 19 Rags
- Issue No. 7
(Jun '96)
1. Hydraulic Fluid Filtration Cart Info
 2. Machinery Room Improvements Upgrade Status
 3. Demand Only Requisition Procedure
 4. Tip of the Quarter - Proper Servicing of RSD Accumulator (Issue no. 1 repeat)
- Issue No. 8
(Oct '96)
1. Top Five Reasons Why You Will CASREP Your RSD
 2. It's the Little Things That Count (Importance of Proper Maintenance)
 3. Tip of the Quarter - Avoiding Hydraulic Contamination
- Issue No. 9
(Mar '97)
1. Word from the Fleet Liaison - RSD Accumulator Charging Valve, Track Plate Lifting Tool
 2. RSD Overhaul - Accessory Parts SIMA Needs
 3. RSD Wiring Guidance
 4. Traverse Cable Changeout and Related Maintenance
 5. Tip of the Quarter - How to Avoid Electric Cable & Gutter Problems (Issue no. 3 repeat)
- Issue No. 10
(Jun '97)
1. \$400,000 Spent to Clean-up Low Bid Hydraulic System Disaster
 2. TGW Motor Goes Both Ways (Convert a TGW Motor to an RA Motor)
 3. Be Kind to Your Local ASIR
 4. On the Horizon-Upcoming & Ongoing Efforts to Improve Your RAST Life
 - *RSD Block II Upgrade ("-14"RSDs Become "-15"s starting in fall '97)
 - *Machinery Room Improvements (LRC 63)
- Issue No. 11
(Feb '98)
1. Status of RAST Upgrades (LRCs 62, 63, and 64)
 2. Irratic RA system performance caused by seized MSA pivot arms
 3. Shipboard RAST Training
 4. RSD Overhaul - Accessory Parts SIMA Needs (reprinted)
 5. Highlights of Jan 98 Semi-annual HLS Supply Support Meeting

If you would like additional information on any of the above subjects, or are missing an issue that you would like to have, give us a call, email, or mail the enclosed feedback sheet to us detailing your request. We are always interested in hearing your feedback (your own maintenance tip or a topic for a future article).

PREVENTING RSD BEAM UNLATCHING DURING FLIGHT OPS

An unrestrained helicopter on a moving ship is a hazardous situation even in moderate seas. Recently, an unrestrained SH-60B tipped over on the flight deck when the ship was hit by a rogue wave in what was otherwise sea state 3 conditions. We have conducted four Engineering Investigations (EI's) on accidental unlatching of RSD beams and have heard other reports through the grapevine that the beams occasionally unlatch during straightening and/or traversing. These instances should be taken very seriously and corrected immediately to avoid serious injury and damage to the aircraft.

A major contributing factor to unlatching we found was caused by a new RAST Main Probe put out by Sikorsky. We'll talk about that later, but first let's talk about what the RAST maintainer can do to help prevent this problem.

First, make sure that LRB 11 and LRB 12 have been completed correctly. These two bulletins were issued via NAWCADLKE DTG 040902Z SEP 96 and 151102Z NOV 96 respectively. LRB 11 (inspection of beam end roller clearance) is closed, but if you were not the one who accomplished it, or you've had recent problems, you may want to go through it again. And if you find any gap(s) between your RSD beam end rollers and crossbeams that exceed .010 inch, contact your local ASIR or SIMA overhaul shop for help in re-shimming your beam rollers. Half of you have not responded to LRB 12, which was developed to prevent loosening of the latch pivot posts. If you have not completed LRB 12, please do so at the earliest opportunity. And again, even if you've accomplished LRB 12, it wouldn't hurt to check that your latch pivot posts are firmly in place every time that you remove cover plates 4 and 5 for maintenance.

Ensure that the latch flags on the arresting beams, and latch light on the LSO console, are working properly. We know that the flags have been a high failure rate item, and the latch switch is a high adjustment rate item, but don't ignore them. Though the beams usually latch, even if the indicators aren't working, sometimes the indicators don't work because the actuator linkages are seized. When this happens, the latches can't seat properly in the beams. Also, there should be no paint underneath the flag sliding actuators. Paint in this area has caused the actuators to bind, and the beams to unlatch. LRC 57 installed a flexible flag and actuator (-14 RSDs) to alleviate flag failures, and LRC 62 installed new latch switches and actuators to decrease the need for adjustments on -15 RSDs.

Ensure both sets of cam brakes rotate fully up when

on, and fully down when off. When one set of cam brakes engages the beams fully or partially, while the other doesn't, the helo probe load will rack the beams forcing them to unlatch, and possibly ripping one out of the crossbeam. Ensure all the linkages, sliders and pivots are free and lubricated. Check that the brake actuators are not leaking, particularly through the air vents. Air vents should be installed on the air side of the actuators to prevent build up of air pressure when the springs return them to the on position. If fluid is leaking past the seals into the air side, the actuator cannot return to the fully on position. Some actuators have been found with solid plugs installed where the air vents should be. The actuators are packed with the plugs for shipping, and the air vents must be ordered separately and installed when assembling on the RSD. If you find solid plugs on your brake actuators, replace them with air vents immediately.

Check out and adjust the operation of your unlatch clamping cylinder i.a.w. OMI chapter 6-159, c, (6) through d, (35). It's normal for the clamping cylinder to kick when the beams slam together. This happens because the slamming sends a pulse through the hydraulic system that finds its way to the clamping cylinder. That's why the adjustment of the position of the cylinder is critical to keep the kick from moving the latch and possibly causing an improper latch. If the kick is so large that the cylinder can't be adjusted for proper operation while keeping it from moving the latch when closing the beams, then the Marotta valves are probably contaminated. Flow through the valve spool to the tank can be restricted by the build up of particles, increasing the backpressure and the magnitude of the clamping cylinder kick. Contamination control and replacement of the valve assembly are then in order.

Check the beam operating cable tensions. Uneven cable tensions won't cause unlatching, but will greatly aggravate many of the other problems.

Check the latches and beams for deformations and wear. Deformations may be causing unlatching now, but was probably caused by unlatching or some other problem in the first place. Uneven wear may occur over time. Replace the beam or the latches when inspection reveals the beam and latch surfaces are not square to each other.

Measure the beam face to face opening below the scallops with the beams latched and pried apart i.a.w. with LRB 9, NAWCADLKE msg DTG 072120Z NOV 91. Your measurement should be 2.78 min. to 2.95 inches max. If your measurement is less than 2.78, then you

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PREVENTING RSD BEAM UNLATCHING (cont'd)

(Continued from page 5)

probably have too much paint on your beam faces. This leads us finally to the SH-60 RAST Main probe problems.

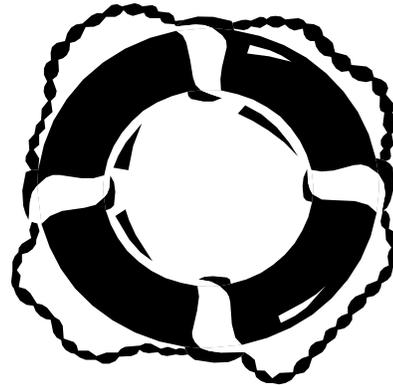
The RSD was designed to interface with a 2.625 inch diameter probe, the original size of the SH-60 probe. Back in 1987 Sikorsky started replacing these probes with 2.800 inch diameter probes to eliminate probe cracks. These probes will eventually damage the latches and cause unlatching. Some RSDs will not latch around these probes at all.

When we alerted Sikorsky to this problem in 1991, they put out a change to work the 2.800 diameter probes to 2.73 inches during routine maintenance. If you discover a 2.800 diameter probe on an SH-60, inform the det. that continued use of this probe will damage your RSD and may lead to an unlatching.

A good indication that the 2.800 diameter probe is installed is if the probe routinely slips forward and/or aft through the telescoping pins on the arresting beams while traversing. The larger diameter doesn't allow both sets of pins to close around it.

And finally, check if the probe is sitting too low relative to the RSD beams. The top of the lower probe flares out. If this portion of the probe is sitting in the capture area, it can interfere with proper latching or pry on the beams.

Submitted by,
Dave Leung



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THE ASSIST

**COMMANDER
NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION
CODE 4.8.10.2
HWY 547
LAKEHURST, NJ 08733-5090**

Ships: Pass to RAST Technician

An unrestrained helicopter on a moving ship is a hazardous situation even in moderate seas. Recently, an unrestrained SH-60B tipped over on the flight deck when the ship was hit by a rogue wave in what was otherwise sea state 3 conditions. We have conducted four Engineering Investigations (EI's) on accidental unlatching of RSD beams and have heard other reports through the grapevine that the beams occasionally unlatch during straightening and/or traversing. These instances should be taken very seriously and corrected immediately to avoid serious injury and damage to the aircraft.

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