

THE ASSIST

November 1995

Issue No. 5

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

A WORD FROM THE RAST FLEET LIAISON

NAWC Lakehurst held a maintenance review conference for the RAST system from August 21-25. Mainly, the purpose of the conference was to insure that the proper maintenance level ("O", "I", or Depot) was assigned to all RAST repairable parts. Also discussed at the conference was PMS for the RAST system. Techs should see some PMS changes in the not-too-distant future. I'll use this newsletter to give the RAST community a heads up when revisions to MRCs are issued.

I would like to thank EN2 Oyekan from the USS KINKAID and EN2 (SW) Berg from the USS UNDERWOOD for making the trip to Lakehurst and providing their working knowledge and RAST experience to the conference.

Also attending the maintenance conference were representatives from SIMA Portsmouth and San Diego, SPCC Mechanicsburg, and ASIR reps Don Garlow (Pearl Harbor) and Bill Barnett (Portsmouth), and several shops from Lakehurst. Everyone contributed many helpful comments during the meeting, and their contributions will result in a more effective

maintenance plan.

The feedback from the RAST Techs is

Thanks again to:

**EN2 Oyekan (USS KINKAID) and
EN2 (SW) Berg (USS UNDERWOOD)**

for their contributions to the RAST Maintenance Plan Review Conference.

getting better. Thanks to all of you who have taken the time to drop us a line and give us some feedback. Please don't hesitate to contact us (either through the enclosed feedback sheet or give us a call) with any questions or comments about the RAST system.

Please remember to include us:

"NAVAIRWARCENADLKE//48J200/P" as an **action or info addee** on all RAST message traffic.

'Til next time, be safe.

Submitted by:

EN1 (SW) Dan Fales

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STRIPPED MAROTTA VALVE THREADS

The following is a SIMA-Portsmouth memo highlighting an issue that all RAST maintainers should be alerted to:

To: HLS/RAST Division Officer 31 OCT 95
 From: MMI Siefkas
 Subj: Marotta Valve Cam Shaft Threads

It has come to my attention from a recent incident that the threads of some Marotta Valve Manual Actuating Lever shafts (P/N 6532C407-1) returning from the fleet for refurbishment are severely damaged. These threads are, by design, well protected from casual damage, so it is suspected that the cause of this damage is improper use of tools during routine maintenance. The damage noted could easily be due to the use of Locking Pliers ("Vise-Grips"), rather than the manual operator, to rotate the shaft during manual operation of the RSD while performing maintenance. Since a cursory inspection of all shafts coming into the shop indicates that about one-third have damaged threads, this is thought to be a serious maintenance problem.

The improper operation of the Marotta Valve not only results in a severely damaged shaft (which must be replaced at a material cost of about \$270), but more importantly, the thread damage makes it nearly impossible to properly install the manual actuator, thus making manual operation of the RSD during flight operations an unsafe evolution at best.

All RAST maintainers should check that manual actuators can be threaded correctly onto the Marotta valves. If the damaged threads can't be repaired, the actuator may not function using the lanyards and the Marotta valve should be replaced. Using pliers or Vise-Grips instead of the lever during routine maintenance may save some time, but the ability to operate the RSD manually (in the event of a failed RSD pump, cut electric cable, etc.) during flight ops will be

*Thanks to:
MMI Siefkas and MMI Freridge
 for taking the time to report this problem;
 the most important step in improving the system.*

compromised.

We are currently looking into a redesign of the manual actuating lever that will eliminate the damaged thread problem.

Submitted by:

"THE ASSIST" is an unclassified, quarterly, publication issued by the RAST team of the Recovery Branch, Support Equipment/ALRE In-Service Engineering Division, Engineering Group - Naval Air Warfare Center, Aircraft Division, Lakehurst. The information herein is unofficial and is provided to assist the RAST community in the operation and maintenance of the RAST system.

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EVERYTHING YOU EVER WANTED TO KNOW ABOUT TRAVERSE CABLE LUBE....

When the RAST system design was relatively new, there were **many unexplored corrosion problems**. One of these problems (or as we say today, challenges) was the unseen and unprotected traverse cable. Naked to the world inside the trough, the cable did what came naturally, and reverted to a more natural state- the Fe of the cable became Fe_2O_3 and Fe_3O_4 (i.e. it rusted!). Preservation was required.

The lubricant used to protect the purchase cable of the MK 7 arresting gear system on aircraft carriers was chosen. The lube worked very well in the MK7 application, and certainly deserved a shot at the traverse cable. This lubricant (**Grikote 31EP**, made by the Grignard Company) is based on a synthetic ester oil and contains EP, or extreme pressure, additives. Exactly what was needed for the demanding job of lubricating the dynamic purchase cable.

Grikote 31EP, an expensive product, was substituted by another product of the Grignard Co.: **Prelube 6**. Prelube 6 had many benefits over the Grikote 31EP, the most significant being cost- it's less than half as much as the Grikote 31EP. Prelube 6 and the Grikote 31EP are used interchangeably (they share the same stock number), but Prelube 6 is probably the standard supplied today.

After several years of use, the traverse cables were still corroding. There was no improvement with the Prelube 6 or the Grikote 31EP. Both required frequent application to the entire cable, a task we heard is quite difficult. The maintenance was too labor intensive and it was not doing much good.

When we reviewed the traverse cable manufacturing drawing, we discovered that there was no preservative applied during the cable manufacturing process. This cable started its service life without much of a chance.

Five years ago, it was realized that although Grikote 31EP was working quite well on the MK 7 arresting gear purchase cable, the same lube was not cutting it on the traverse cables. Why? Because,

although both cables are made of improved plow steel, they live very different lives. First of all, the purchase cable is heavily preserved during manufacture and (aside from being jerked out on the flight deck once in a while) hangs out below deck in a nice dry arresting gear room. It also travels at the speed of light compared to the traverse cable.

The traverse cable, on the other hand, starts out with no preservative, and then (as soon as the trough drains clog) finds itself standing in or sloshing around in the swamp known as the RAST trough. Talk about a contrast in neighborhoods!

The thin film lubricant required to penetrate between wires and strands to lubricate the speedy purchase cable just did not stand up when applied to the traverse cable.

So, there is an unprotected cable maintained with the wrong type of lubricant. Certainly covers all the problems, right? Guess again. Any oil in the trough, such as wire rope lubricant or greases, washes overboard leaving an iridescent sheen on the water that upsets all the environmental people. As most of you probably know, overboard discharge is a **huge** EPA concern. Further, the Navy has been mandated to *eliminate all overboard discharge* (including, and especially, those that leave a sheen).

Since the ingenious gnomes at Grignard are aware of today's environmental standards, they developed a linseed oil based product called **Prelube 19**. The scent of Prelube 19 might remind you of some of the old linseed oil based paints. Also, it contains a corrosion inhibitor and drying agents; and actually polymerizes onto the wires. On the outside it forms a semi-hard protective film. Inside it remains pliable, providing lubrication. Best of all, Prelube 19 is biodegradable, and has no hazardous ingredients. And, any incidental discharge does not leave the tell-tale sheen of pollution on the water.

What we are trying to do is ensure that the cable is preserved with Prelube 19 from "cradle-to-grave". The cable drawing has been revised to require the application of Prelube 19 during manufacture. Unfortunately, there are still uncoated cables in the

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supply system and it will take some time for attrition to weed them out. The NSN for 5 gallon cans of Prelube 19 is 9150-01-398-7341; and we have applied for an NSN for one gallon cans as well.

Traverse cables coated with Prelube 19 will require much less maintenance.

Before your traverse cables are installed, check whether or not there is a coating on the cable. The Prelube 19 leaves a semi-hard brown film of discernible thickness that you can scratch with your fingernail. If you don't think the cable is coated, soak the coiled cable in a tub of Prelube 19 for an hour or so, remove it, and let it dry overnight.

Here's the good news! We expect that the Prelube 19 coated cables will require **much less maintenance** once they are in service. Following the results of testing currently being performed here at Lakehurst to see how well the Prelube 19 performs, we plan to extend the periodicity of application for maintenance (for Prelube 6 or 19) to

quarterly or possibly semi-annually.

Prelube 6 can still be used to maintain the cables if you are having trouble getting the Prelube 19. Prelube 19 is a new kid on the block, but it is proving itself in commercial maritime industries (and also on the San Francisco cable cars) and elsewhere in the US Navy. We are confident that Prelube 19 has the combination of corrosion protection and lubrication to protect the traverse cable, as well as the environmental friendliness to satisfy even the toughest EPA watchdogs.

One thing is certain, the cable treated with Prelube 19 will last much longer than the bare cable of 5 years ago.

Submitted by:

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