



► **“HALF-FLAP RHINO”**
THE LSO SCHOOL’S OWN CAPTAIN
“BARF” BYERS DISCUSSES THE PROS
AND CONS OF MAKING HALF-FLAP
THE STANDARD FOR RHINO RECOV-
ERIES...



► **“PALS TROUBLE-
SHOOTING”**
VX-23 CARRIER SUITABILITY LSO
LT MICHAEL “FLANDERS” ROSS
DISCUSSES TROUBLESHOOTING FOR
PALS...

May 2013



Paddles monthly

ADDRESSING THE NEEDS OF THE LSO COMMUNITY
THROUGH SAFETY DISCUSSIONS, OPERATIONAL UPDATES,
AND HISTORICAL READINGS.

Half-Flap Rhino

““99” Rhino’s Full-Flaps... Working 21 kts down the angle...”

So... the conversation has started again... we’ve been down this road before. The question is, can we, and more importantly should we, make half-flaps the standard configuration for Rhinos during CV operations?

Let’s start with the facts:

- 4 wire ships require 14 kts for full-flaps Rhinos / 22 kts for half flaps (ARB 33-12)
- 3 wire ships require 11 kts for full-flaps Rhinos / 19 kts for half flaps (ARB 34-12)
- TMS NATOPS permits half-flap Rhinos as long as you have the RHW required per the ARBs
- During 4 different sea trial periods, flying qualities were found to be slightly better half vice full-flaps. The consensus was that the delta did not warrant a “line in the sand” with regard to flap position (per Charlie Trost, Fixed Wing Ship Suitability)
- A half-flap Rhino will hit the gear 8 kts faster than a full-flap Rhino, a 7% increase in arresting gear loads, and a FLE impact to the gear (per Chris Ziem – ARB SME AD Lakehurst)
- Wave-off performance delta is essentially the same between the flap settings
- The ARBs note: Recommend 6 knots be added to RHWs of this document, when operations permit, to minimize loads on the aircraft and/or arresting gear

The point of this article is not to say that we cannot make half-flaps the standard configuration for Rhino ship-board recoveries. On the contrary, we believe it might be the right thing to do. The ARB 33-12 and 34-12 require 22 and 19 kts, respectively, for half-flap Rhinos. Considering the ARBs recommend 25-30



Half-Flap Rhino (cont)

kts for aircraft handling considerations, and we normally operate around 25 kts RHW, half-flap Rhinos are not an issue with respect to the ARBs and current operational norms. In addition, half-flap CV recoveries are permitted by TMS NATOPS. The bottom line is that we most certainly CAN come aboard half-flaps in the Rhino.

That said, the old adage applies, “there is no free lunch.” The consensus during carrier suitability testing was that there is a slight improvement to handling characteristics at half-flaps (it’s worth noting that, historically, it doesn’t get much easier than landing a Rhino on the boat). The question becomes, do the benefits outweigh the cost? Most experts agree that although half-flaps is permitted, and might be “easier,” more testing is required before making half-flaps the fleet-wide norm (or Air Wing norm for that matter).

So we understand the benefit, what is the cost? To reiterate an earlier statistic, a half-flap Rhino will hit the arresting gear 8 kts faster than a full-flap Rhino, a 7% increase in arresting gear loads and a FLE impact to the arresting gear. With the bulk of our Air Wings now being comprised of Rhinos, this is not a moot point. There are other potential consequences that are worth investigating in addition to arresting gear FLE issues. A Rhino recently taxied out of the LA, following an arrested landing, with its hook point dangling by the hook-point bolt at one end. One end of the hook-point bolt had sheared off completely. This example is the most dramatic of several recent HAZREPS highlighting Rhino hook-point issues. Airframe FLE is also a concern that must be evaluated.

From a layman’s perspective, there could be several causes for these hook point issues. Rhinos selecting burner in the wires, a 480 standard single-weight setting (this shouldn’t be the issue), or (drum roll please) pilots selecting half-flaps on their own after hearing Paddles announce the winds. You heard that right. I recently heard a rumor that some pilots are hearing the winds call and selecting the flap setting that they prefer. This is a serious safety concern that needs Paddles’ immediate attention. If you have individuals in your Air Wing who think it’s OK to select their flap setting based on your winds call, you need to put an end to that yesterday.

As my blood pressure comes down to acceptable levels, it’s important to reiterate that we support the effort to make landing on the boat as safe and easy as possible. We should evaluate our options with respect to half flap Rhinos, we just need to make sure we do our due diligence prior to making it our Standard Operating Procedure.

Brad “Barf” Byers



PALS TROUBLESHOOTING

Mode I Troubleshooting Tips and Tricks

Precision Approach and Landing System (PALS) Certification commands a great deal of our time here in the Carrier Suitability Department at VX-23, and given the importance of these systems to operations behind the ship, we do our level best during the certification process to ensure that you have well calibrated and fully functional ACLS and ICLS systems when you need them. However, both ICLS and ACLS are complex “systems of systems” comprised of dozens of finely tuned components, and as such, their performance can degrade over time. The majority of problems we see are related to degradations in Mode I performance. Instead of the standard (SIC)(LOBAR) we’re accustomed to seeing when coupled, degradations may result in a pass that raises eyebrows on the platform or in the cockpit. When this happens repeatedly and airwing confidence in the system begins to wane, it’s definitely time to give us a call. That said, here are a handful of troubleshooting techniques based on our recent experience that you can stash in your back pocket to help address issues as they arise, or to help ensure that your Mode I maintains its level of performance after certification.

Hardware Troubleshooting

Obviously, if Channel A of your SPN-46 has been down for an extended period of time, we’re not going to suggest that you scale the back of the island with a roll of duct tape and some paperclips to MacGyver it back into service (probably best to CASREP that one and get the professionals out to fix it). However, if you notice that a particular aircraft is having issues getting locked up for a Mode I, the likely culprit is the aircraft beacon. It may be that the aircraft has no issues getting locked up for Mode II approaches, but is unable to get locked up for a Mode I or Mode IA. The difference here is that Mode II approaches can be executed with a SPN-46 skin track, whereas a Mode I or IA approach requires the aircraft beacon. Close cooperation with CATCC can help you identify aircraft with less than optimal beacons, and the AN/APM-455 Radar Beacon Test Set (RBTS) can help troubleshoot weak players. Of note, the aircraft beacon integrated built-in test is not particularly useful in the troubleshooting process and should not be relied upon to ensure beacon health. Make friends with your CATCC leadership and ask for help in identify beacons that might need work.

Additionally, you may occasionally encounter an “ACL N/A” message where “ACL 1” is normally displayed on the SA display. This likely indicates that your ACLS data link is degraded. If this is the case, try running the data link built-in test from the BIT page, turning off the beacon and data link from the UFC, and then re-boxing ACL on the HSI display to restart all of the ACLS systems. Finally, the “UTM FAIL” message that may be present on the SA display when initializing ACLS is unrelated to system performance, and should not be a cause for alarm.



PALS TROUBLESHOOTING (cont)

Procedural Troubleshooting

Even if every piece of your PALS hardware is working flawlessly, procedural issues can introduce error into the system. The first and most obvious issue to assess is to consider where the handler has parked Tilley. If you look across the platform and see Tilley parked immediately in front of the SPN-46 dishes, well, that's probably not good. Work with the handler to get Tilley moved in order to give the SPN-46 a clear field of regard. Next, take a gander at the frequency plan currently in use. Where is the ACLS datalink frequency in relation to other emitters? It should be separated from the SINS data link by at least 5 MHz for instance. As frequencies get shuffled over the course of cruise, watch for degradations in ACLS performance, and consider asking combat systems to review the current plan if things begin to go awry. Finally, consider which anemometer (engineer-speak for "wind-bird") is selected for use. The SPN-46 system derives its wind data exclusively from the forward anemometer, regardless of which anemometer is selected by the bridge in order to steer the ship. We have seen disparities of up to eight knots and six degrees between the forward, aft, and starboard anemometer sources. The forward anemometer provides the most unobstructed measurement of the winds in the landing area (which is why it is used exclusively by the SPN-46 system), and should also be the reference selected for steering the ship into the wind during flight operations.

When In Doubt

Obviously this isn't an exhaustive list of troubleshooting techniques, and in no way are we suggesting that you should delay contacting us while combat systems debunks the frequency plan as you sweat it out on the platform – just the opposite. If you have any doubts about the quality of your approach systems, please do not hesitate to call us or shoot us an email, and contact the LSO School. Expect that after talking to you, we will probably ask for HUD and PLAT video, APARTS data, and ACLS data from CATCC for the passes in question so that we can start formulating a plan to help you. Finally, expect to have to help coordinate a CASREP with the ship if it is determined that you need engineering help with and/or flight test support for your systems. Even in this era of fiscal austerity, with a CASREP in hand, we can have a team of engineers and Carrier Suitability LSOs on their way to meet you anywhere in the world on short notice.

Bottom line – we're here to support you. Call us if you have any questions or concerns about your PALS performance.

Keep 'em off the ramp, Paddles!

LT Michael "Flanders" Ross

VX-23 Carrier Suitability LSO

What's ahead...

IFGT:

03-14 June
05-16 August
09-20 September

TFGT:

14-15 May
09-10 July

AFGT:

28-29 May
Call us to schedule

Air Boss:

28-29 May

All classes begin at 0900 on the convening date, building 150, NAS Oceana. Orders should be handled through squadron or CAG admin. Contact YN1 Gates with any administrative questions.



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LSO OAG / NATOPS Conference

Spring is around the corner and we are hosting the 2013 LSO OAG and 2013 NATOPS Conference at North Island in San Diego, CA from 21 - 24 May.

Agenda:

LSO OAG (21 May)

- Program Updates
- Year in review
- Paddles Forum / Fleet and Training LSO Stan Discussion
- LSO Top 5
- Paddles Social

2013 CV and LSO NATOPS rewrite (22-24 May)

- LSO PCL Removal
- CV NATOPS Rotary Wing Operations Chapter

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Please log onto <https://airworthiness.navair.navy.mil/> and make NATOPS change recommendations.

We look forward to seeing you there. Please get your shops involved and let us know if you plan to attend the conference. LSO OPS (757) 433-2518 LSO Admin (757) 433-2530

- LCDR Jason "Doofus" Duffie

Visit us online at
<https://www.portal.navy.mil/comnavairfor/LSO>

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