F32 Newsletter

The Journal of the Freedom 32 Sailing Yacht Vol. 2 No. 3 January/February 1988

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Lease New F32 Editor, Assumes Post in September

John Lease, owner of F32 #34 Sans Souci, volunteered in November to take over the editorship of F32. Lease's candidacy was quickly endorsed by a unanimous vote of the F32 editorial board, and he is expected to become a presence in the newsletter commencing with the next issue. He will be in complete charge of F32 commencing with the September issue.

John and Renate reside in Lincoln, RI, and gained notice during the summer by pushing their Wickford-based, shoal draft boat into second place in the Freedom Rendezvous F32 race. A technical area veteran and professional wordsmith, Lease is currently assisting TPI in the documentation area and has also been designated technical editor of Freedom's upcoming newsletter.

Lease's position regarding the two publications was summarized in his comments upon becoming F32 editor-elect. "I think that Freedom's publication is a wonderful idea and will be of enormous value to Freedom owners, but it cannot take the place of a model-dedicated, in depth publication like F32. There is a world of boat subjects yet to be covered, and several areas- such as owner profiles- that have hardly been touched. I want to be sure that F32 continues its good work, and I'm willing to take on the job of editing it to make sure that happens".

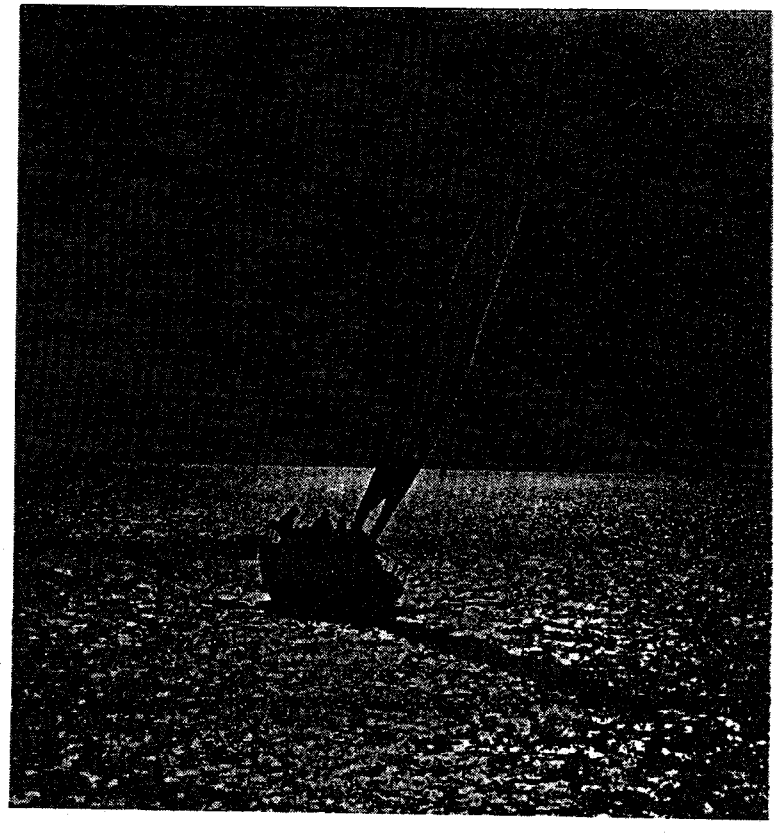
The editorship change ensures the continuation of F32 and will bring new authors and a fresh outlook to a publication that has been substantially the thoughts and writings of one person. Now, when the phone rings, you may find a new voice on the other end requesting articles and help! □

Survey Results Cover 86% of Owner/Subscribers, Two Thirds of All F32s

"Ease of Handling" Dominant Purchase Factor

F32's Owner Survey was originally sent out as part of the January '87 issue- just one year ago. Responders, either in full or in part, eventually numbered 64, out of 74 owner/subscribers, which is a phenomenally high percentage, as surveys go. About two-thirds of the responses came in without prompting; the last third resulted from quite a bit of mail follow-up by F32. The survey information was of immediate use in confirming interest for what turned out to be a most successful meeting last March, and also provided some firm information on the number of people experiencing overheating, window leaks, and so on. The latter data was very important in determining whether problems were isolated or widespread in nature, and provided the impetus for F32's

SURVEY cont p.3



F32 stomping out to weather in 'Round Buzzards Bay race Sept 12. (Balance of racing fleet is behind camera).
-Photo by Dorothy I. Crossley

Subscriptions

F32 is published every odd numbered month for a total of 6 issues/year. Subscriptions are $18.00 per year; additional subscriptions mailed to crew (owner must pay) are $15.00 per year. A subscription form is part of the last page of this newsletter; please supply data for crew subscriptions on a separate sheet.

The Freedom 32 Newsletter ("F32") was inspired by the interest demonstrated at the Freedom Rendezvous held at Newport in June 1986, and by the obvious benefits that would be gained by the exchange of information between owners concerning the maintenance and operation of the boats. F32's prime mission is the publication, in detail, of information concerning the correction of deficiencies and the institution of improvements to F32s, and will rely primarily on reader supplied articles and information in this area. It will also carry articles on the operation of boat systems, the cruising and racing of F32's, social events, raftups, factory advisories, interviews, owner profiles, classified ads, and anything else deemed of specific interest to F32 owners and crews. All F32 author and editorial efforts are unpaid. Break-even revenues equal approximately 70 paid subscriptions, so your support as a subscriber is solicited and greatly appreciated. Direct operating costs include appromixately 70 complimentary copies to be sent to major yachting magazines, Tillotson-Pearson Corporation, and other organizations worth lobbying.

F32 will solicit the advice and assistance of Tillotson-Pearson, Inc. ("TPI") as appropriate, and plans on a constructive and mutually advantageous relationship with TPI. F32 is however an independent publication of F32 owners and its statements and opinions are not necessarily those of TPI unless specifically attributed. While every effort is made to ensure accuracy, F32, its editor, and contributors are to be held harmless from the consequences of inaccuracies of content.

January 30 Meeting Comes Up Soon; Will Be At The Moorings Restaurant, Newport

Our informal mid-winter cruise planning meeting and get-together takes place in Newport just after the January thaw, on Saturday the 30th. Chairman Ian Morrison has moved the venue from Christie's Restaurant (closed for redecorating) to The Moorings, on America's Cup Avenue, in the heart of the waterfront and overlooking the site of the annual In-the-Water-Sailboat Show. A substantial group of stalwarts is expected, and the schedule leaves room for shopping and poking around. The affair is a luncheon meeting, possibly followed by dinner later on for thos interested. Late morning coffee/early cocktails are planned for 11 AM at The Moorings, followed by lunch at noon. Ian will then present his plans for the pre-Rendezvous F32 Long Island Sound Cruise scheduled for June 25-30, and there will probably also be discussion as to our organization (or lack thereof) It's expected that things will wind up around 2:30.

All ordering will be off the menu, and overnighters are encouraged to make their own hotel arrangements. There is no registration fee and we can accept attendees up to the last minute- but let Ian know you're coming! His number is (401)253-7036. □

Freedom Yachts Launches Quarterly Newsletter; First Issue Due in February

Paul Petronello has announced the formation of the "Freedom Newsletter" (for now) a quarterly publication covering all Freedom owners and boat types. He plans to model the publication on F32- "We don't want just a bland sales tool or house organ. We instead hope to provide solid, valuable information t help Freedom owners in the maintenance and us of their boats." The newsletter will be a clearing house for Freedom events, announcements, sales, new owners, and product informa tion, and will become the publication of record for a planned Freedom Owners Association. One of the "Freedom Newsletter's" firs activities will be to involve its readership in the selection of a name for the newslette which will be coordinated and edited by Susa Miles, the lady who ran Freedom's successful

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SURVEY from p.1

efforts to diagnose and publish answers to the shortcomings identified. But complete publication of the survey results had to wait 'till now due to the subject being "bumped" from previous issues by more timely subjects.

Let's recap what the survey requested. Owners were asked first for details on their boats. There were then some questions on interest in the March meeting, the Freedom Rendezvous, a summer cruise to Maine, and swapping or chartering each other's F32s. This was followed by the "Boat Problems" section (previously mentioned) and some questions on owner's expectations versus experience. The survey concluded with a personal data and comments section. We'll go through the results in the same order that the questions were asked.

42 of the 64 boats have white hulls. 12 were grey, 4 cream, 3 blue, 2 beige, and 1 tan. 33 decks were grey (white w/grey non-skid?), 20 white (ditto?), 3 tan, 3 buff, 3 cream, 2 blue. Blue was the dominant dodger/sailcover color (40), with a surprising 9 either red, maroon, or burgundy, 6 green, 6 white, 2 brown, and 1 black. There were some two-tones between the dodgers and the sail covers- we picked one and ignored the other.

27 boats had refrigeration, with Adler-Barbour the most popular. 29 owners belonged to yacht clubs or sailing associations. There were 25 shoal keels and 37 deep ones (there were "no answers" on this question, as on most of them, so total results will seldom equal 64). Most owners opted for a solid propellor (51) versus folders and featherers (11). 22 said they had the bow water tank, 31 said they didn't.

Several owners indicated some interest in swapping cruises or chartering. This information is tabulated in a sidebar. I regret that it was not published as soon as available last spring. Its possible time value to owners was overlooked.

Under the "Boat Problems" department, 12 reported toilet flushing problems, 15 the overheat alarm, and 15 had water priming troubles. 18 boats had thumping masts, 5 had experienced broken toilet bases, and 6 had leaky hull to deck joints. Nearly half the respondents (30) complained of window leaks.

After this part the survey became more subjective. "Ease of handling" was the major reason given by two-thirds of owners for buying an F32, and nearly all felt that the boat had delivered on that promise. 26 mentioned the cabin layout and space, 10 were impressed with the boat's speed, and 9 singled out the free-standing, battened rig as part of their purchase decision. 5 mentioned the Gun Mount spinnaker, while 11 noted the F32's construction. 6 specifically noted the boat's suitability for single-handling. Other mentions were heavy weather stability (2), looks (5), finish (3), builder reputation (3), price (2) and presence of a local dealer (1). Realizations came pretty close to expectations, tempered by several observations that, while the boat was easy to handle, it did not quite live up to its billing in that area.

Windward performance was the most frequently mentioned debit (10), along with ligh air speed (5). Seven mentioned mast partner leaks, while 4 each singled out anchor handling difficulties and gel coat crazing, along with the feeling that the Gun Mount/launcher design could be improved. Bad dealers, electrical problems, the starboard list, "factory problems," and shaft/strut looseness and leak each got 3 votes. Two people felt the holdin tank too small, and there were over 20 other "single items" noted, in addition to the toilet/overheat/mast questions covered earlie on.

The last question in this section asked owners whether their next boat would be "Freedom-type or conventional rig?", and may be read as a fairly good indicator of how owners feel in total about their F32s. Only 44 people answered this question, which probably should have been asked as "yes-no-maybe don't know". But 33 (75%) asserting that the would stick with the Freedom-type rig- and several of these specifically singled out Freedom Yachts. 9 owners said "maybe"; only indicated a definite intent to return to a conventional rig. All of which indicates that, for most of us, once you've given up grinding sheet winches you really miss it- like a big hole in your head.

"Personal Data" was the last area of the survey. 56 men, all skippers, gave their ages, for a median of 50. The mode tied at 4 each for 51 and 53. Youngest guy was 32, mos mature was 68. 45 ladies responded, 2 of the skippers. The median was 47.5, youngest 32, worldliest 67. But the mode was 36! (4).

Degrees were plentiful, with 84% of the men and 64% of the ladies holding one. The ladies had 16 advanced degrees, including 3 Ph.D's; the men the same amount, including 4 Ph.D's, 6 medical degrees, and 1 lawyer. 29

SURVEY cont p.4

SURVEY from p.3

people owned their own business. 44 owners reported in with a spouse or friend, 13 were unattached, and 7 didn't say. 7 owners were retired, and 3 were partway there. One couple and 2 singles were living aboard their boats.

Occupations included several engineering executives and research directors, securities and banking people, plus software and firmware developopment engineers. There are 4 teachers, plus a professor of mechanical engineering; 3 physicians, 2 dentists, and a veterinarian; several social workers, an attorney, and a pilot. On the enteprenurial side we have a grocer, dry cleaner, composite materials dealer, insurance and real estate, including development and building- plus manufacturer's reps, a rope manufacturer- and a merchandiser of power boats!

Personal income was the only area in the study in which resistance was noted, with less than 50% of respondents providing data. Many people are very sensitive on this issue, and I can understand that providing income information to a close peer is probably perceived very differently from sending it to some larger, more faceless and dispassionate survey organization. For those who may have been offended by the question, my apologies. The major reason for requesting income information- so we could compare ourselves to other indices from the yachting industry- now appears moot anyway, as their data bases are said to be of questionable accuracy and extremely hard to define.

That said, I think it is reasonable and pertinent to reveal a few statements about F32 owner incomes, none of which will come as any great shock. And our data base of nearly 50% may be quite representative of the group (it's huge compared to the miniscule percentage of respondents that Shere Hite is making millions writing about). The median family income for reporting F32 owners is $95,400 and is not far away from the mode of $100,000+." Highest figure reported was a cool half million, the most modest about $45,000. Nearly half the respondents had double incomes, and a few of these are "DINKs" (Double Income, No Kids).

The detail information concerning income has remained private to F32, and will continue to be so.

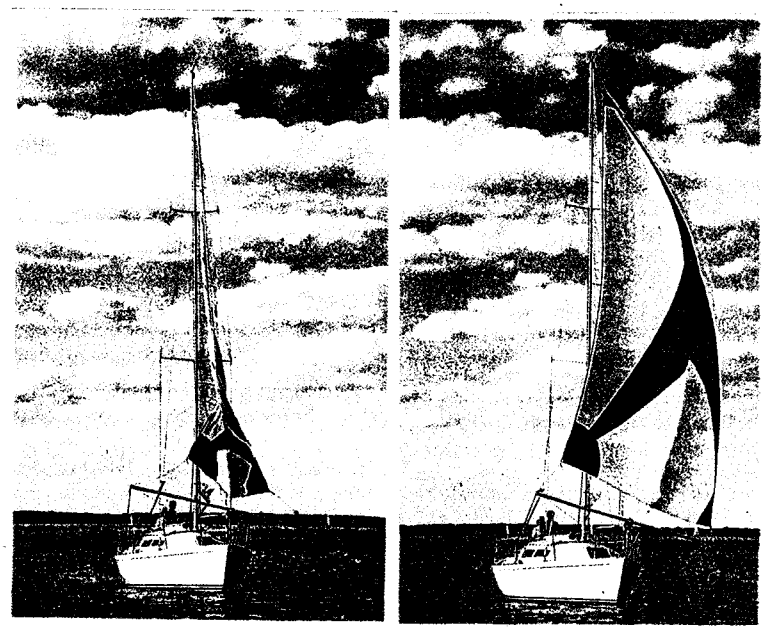
Back to boats. The F32 was the first sailboat for 6 owners, and the first above the Hobie Cat range for another 5. But for one owner the F32 was boat #9, for another #7. Most had owned something above or close to 30 prior to their Freedom. The average previous ownership was about 3 boats, describing a cross section of the American, Far East and Canadian boatbuilding industry over the last 25 years, including a Bermuda 40, CSY37, Wasque 32, Cheoy Lee 36, Alberg 30, some Ensigns- and lots and lots of Sunfishes and Hobie Cats. 52 owners answered the "Level of Experience" question, as follows: Day Sailor 6; Coastal Cruiser- 20; Occasional Close Offshore- 15; Blue Water- 11; World Girdler- 0.

As for where the boats are: F32 has tried to track the location of the whole fleet. Here it is, and I think it's pretty accurate.

NE-NY-	39 boats,	41%
MidAtlantic-	14 boats,	15%
Florida-	12 boats,	13%
Gulf Coast-	4 boats,	4%
Great Lakes-	16 boats,	17%
West Coast-	6 boats,	6%
Alaska-	1 boat,	1%
Caribbean-	4 boats,	4%
	96	100%

My thanks to all who cooperated in the survey. It's been very useful to me, and I hope it is of interest to you, too.

-Ed.



Spinn Furl- a new twist from Garry Hoyt and Hall Spars. See Scuttlebutt.

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'87 Block Island Rendezvous. Susan will be assisted by a well known area F32er- none other than John Lease, editor-elect of F32 (see article this issue)- who will also serve as the Freedom publications' technical editor.

Miles' vision of the newsletter calls for a more generalized approach, necessitated by the variety of Freedom models to be addressed and with a strong slant towards personalities and the human angle. "We can't treat subjects to the technical depth that F32 has explored, because there are too many different designs, and we only come out four times a year" she said, "but there will always be room to print answers, with adequate explanations. We hope to tie the whole Freedom community- owners, factory, and dealers- into a communicating, belonging whole that benefits from each other's knowledge, experience, and criticism."

F32 applauds the creation of Freedom's publication, and has offered to support it with generalized rewrites of previous F32 articles, where appropriate. We also wish John Lease the best success in his technical editorship of it. □

F32 Swap and Charter Interest List

(Consult Spotter's Guide for address and phone info.)

Might Swap-	Area	Might Charter - Other F32	Area	Notes
Roettger	NE, PR, VI			
Walcoff-in L. Champlain		Walcoff - Mynahan	South, Carib.	To Fla next yr?
Hickey-in	Alaska-Carib, Fla, Hawaii	Hickey	(ditto)	
		Dunn -	L. Superior	
Lease-in	Narragansett Bay			
Hansen-in	Lake City, MN	Hansen -	Maine	
Taylor-in	L.I. Sound			
Phelps-in	Rochester, NY (Lake Ontario)			
Horn-in	L. Superior	Horn	wants south	Boat is for sale
Siegel				Boat in Fla
Rutherford-in	L. Michigan	Rutherford-wants Carib.		
Finch-in	L. Michigan	Finch		
Philbrick		Philbrick		
Huling-in	L. St. Clair	Huling		
		Dyer - Carib?		

F32s for charter: Blanken (Chesapeake), Corser (L. Michigan)

Add'l Note: This information is one year old. Additional information sent us will be promptly published.

Confidence In Keel Repair Calls For (Really) Understanding The Problem, Plus Proper Techniques And Quality Repair Materials

To recap, quickly: Indo hit a reef, hard, in August 1985. By Labor Day she had started leaking noticeably. In the following spring we labored mightily to fix her, but it didn't hold. In the fall she was professionally repaired, and has been dry since. During that period we learned a lot, and thought a lot, about the F32's keel and fin keels in general. The following is dedicated to those skippers who in the future test the boat's structure stringently enough to also find water in their bilges.

"There are two kinds of pilots- those who have landed gear up, and those who are going to."* Indo's gear up landing was at about 3 knots, onto a large, square granite ledge in Gilkey's Harbor, Maine. To be more accurate, we crashed into it- not onto it- which is the best way to suddenly stop a boat that I know of. It busted off the john, too (see article, March issue). Most "groundings" are just that; you slide- amidst pandemonium- up onto a ledge, but there is usually little damage except to the forward bottom of the keel, (which looks as if the hogs had got to it), and to the self esteem of the skipper. But when you hit a ledge with the leading edge of the keel the resulting stop is violent, and the chances of structural damage (boat, you, or both) jump alarmingly.

In this instance it looked as if we'd gotten off with only a good dent, as the bilge was dry. But the boat took water on the wild Labor Day trip home, and the keel wagged back and forth when she hung dripping in the slings a fortnight later. The keel stub to keel joint had split open, meaning that the keel was no longer completely rigid in its attachment to the hull. Water had started leaking up around the keel bolts into the bilge.

The keel on an F32 is a 3500 pound lead casting. The casting mold accomodates 6 1" thick threaded stainless bars which are held by the mold fixture at slightly splayed angles- 3 to port, 3 to starboard. The bars extend down into the casting, and are bent 90° at their bottom ends, so they cannot pull out, nor can they twist. There is also a 7th, smaller threaded bar at the center of the thin after end of the keel. The lead casting is poured with these threaded bars in place, and they become an integral part of the keel, poking out about 3" above its top surface.

The stub keel- that part of the hull tha turns down to match and meet the lead keel at their junction 12" below the hull bottom surface- is part of the solid, uncored FRP portion of the hull which stretches along its centerline and is greatest in width (about 2'-3') in the area of the keel. The stub keel's flat bottom- where it attaches to the lead keel- is said to be 3/4" thick, and the bending loads transmitted to the stub by its 3500 lb burden are partially fed into the hul itself by transverse floors (under-sole bulkheads) that brace the stub keel and are glassed to the hull.

At assembly time the hull is lowered ont the jigged keel. Because the keel bolts are splayed to broaden the attachment base and enhance the rigidity of the keel's attachment to the stub, it is not possible for the bolt holes to initially be a snug fit- the splayed bolts require an oblong hole- and it's doubtful that the manufacturing tolerances would allow a tight fit, anyway. Instead, the hole are initially loose and the whole assembly goes together "wet"- not only is the joint slathered in filled or matted epoxy; it is also squished around the bolts and into the holes, where it creates a "zero clearance" assembly, adding to the shear resistance of the stub keel to keel joint. After the epoxy has cured the keel joint is filled and sanded where necessary, wrapped with glass tape, and finished off. Nuts and washers on the keel bolts complete the assembly.

The factory's instructions for repairing a split keel joint essentially replicate the above, but we had quite a time getting it done, and it ended up costing a lot of money. For starters we were working outdoors in a boat yard, not inside a boat building factory with its special jigs and fixtures and overhead lifting machinery. To fix the joint you must get at it, which means that the keel mus be lowered away from the hull far enough for the joint to be properly dried, cleaned up, and sanded prior to glueing everything back together. To do this you assemble lots of jacks and start jacking the keel up off its blocks while following along with the jackstands supporting the hull. Lots of jackstands, too, please. With the whole works raised about 2", and the keel bolt nuts all

*Old and popular aviation maxim.

KEEL cont p.7

KEEL from p.6

off (they are 1 5/8" across; you need a 3/4" drive socket set worth $1000.00) you gingerly release the keel jacks to lower the solid lead, 3500 lb keel down in order to get a 1" -2" working gap between it and the stub keel.

But it wouldn't come down.

We were speechless. We wiggled it, as much as we dared- you don't want to get that hull shaking on its jack stands- and it wouldn't budge. The crack was 1/16" - 1/8" wide, and that was it. We finally gave up on dropping the keel. The joint was cleaned and blow-dried as best we could, and epoxy was then teased in with old hacksaw blades. The keel was re-jacked and bolts tightened. Next day the epoxy was still tacky. We blamed it on the cold and built a cardboard heat box around the keel joint. Things improved, and we taped the joint and launched a couple of weeks later. The fix lasted less than a month. By fall the boat was leaking badly and I was very trepidatious about the automatic bilge pump failing. Without it, she would have gone down in no more than 2 days.

When hauled in the fall there was no sign of the tape we'd covered the joint with, and the keel- as expected- was looser than ever. Meanwhile, we had found from TPI that the spectacle of 3500 lbs of keel being held up by the tight fit of the fiberglass around the threaded bolts was not an unusual occurence- which says a lot for the "wet fit" method of keel installation. To make the keel come down you resort to whatever will help- steel wedges pounded into the joint, banging on the keel bolts with sledge hammers, and so on. We hadn't known that. But it turned out that our epoxy was no good, anyway (probably too old), so not dropping the keel was, for us, moot.

At this point I was not only dismayed by our lack of success and the strain of worrying about a leaky boat all season, but had also started having second thoughts about a pair of longitudinal hull cracks- one just before and one just abaft the keel, each about 3" long- that I had noted in the spring and filled with epoxy putty. They hadn't appeared to go all the way through, and I had treated them- rather cavalierly- as "stress relief" cracks, not to be concerned. Yard owner Dick Desmond had not felt that way, though, and I eventually concluded that I certainly had no adequate basis of experience upon which to make the breezy judgement that had been rendered. And, if the cracks were important, I had no idea how to correctly cope with them. It was time to get an expert, and disappoint my insurance company.

Kurt & Lynn Spaugh To Conduct Winter Test Program

Fuel Tank Pickup Relocation, Cooling System Surge Tank and Water System Changes Will Be Tried Out

Dania, Florida based Kurt Spaugh has volunteered to keep the F32 problems correction program rolling by testing out several fuel, cooling, and water system fixes upon Rockhopper (#71). The Spaughs, both computer software specialists, live aboard Rockhopper, which is based at a marina in Dania. Kurt will be recalled by F32 readers as the source of some very revealing information about the water system (F32, Sept/Oct '87). He has personally experienced all three of the problems he is going to test out the corrections for, and is approaching the program with grea enthusiasm. "The conditions required to properly check out the revised fuel tank pickup occur here with great regularity" he said. "The northers blow down against the Gulf Stream, which flows by pretty close ashore, and kick up a really mean chop. With 25 knot blowing we'll have an ideal lab in which to check out tank level versus rough sea and hee angle performance!" With Lynn helping, Kurt should soon find out if the partially filled tank will continue to feed under trying conditions. (See F32, Nov/Dec). The Spaughs will also mount a cooling system surge tank and make other changes to try and confirm a final solution to the overheat alarm problem (F32, Sept/Oct '87). They will also make changes to the water system to correct the priming problem, suggested by NH dealer John Nimphius (F32, Nov/Dec '87). □

KEEL from left

Inquiries at TPI led me to Bryan Barer, TPI laminate engineer who had seen the F32 through from design to production. Bryan too on the job as a private contractor and after examining the keel announced that, yes, the cracks were important, and would be fixed by grinding them out and "scarfing in" glass in manner not dissimilar from woodworking. Then he climbed up into the boat, peered around th keel floors, and found more cracks, and separation of a keel stiffener- all of which I'd missed. Clearly, I'd found the right guy.

KEEL cont p.8

KEEL from p.7

Bryan showed up the following weekend with a helper, tools, and repair materials- including a great new epoxy that didn't even exist at the time of Indo's molding in late 1984. This time the keel was so loose it obligingly fell down, revealing the partially cured residue of my ineffective epoxy. After fixing the cracks and putting the keel back up, Bryan added a substantial, faired band of fiberglass around the keel joint- far more than originally put on- in order to add some strength in this very important area (see illustration). The boat has been dry ever since, and the keel's "belly band" does not appear to have slowed her down. It's wonderful to have a non-leaking boat. The bill was $2600, with an $850 deductible.

No matter how good the design and construction of a thin fin keel, the very fact that so much weight is suspended from such a small area will heighten the liklihood of some sort of failure in the event of an exceptionally hard grounding. Knowledge of 4 accidents leading to keel leakage in the F32 indicates that Indo's reaction was typical: momentary flexing of the keel stub, possibly creating internal or external cracks and floor integrity problems, accompanied by the cracking loose of the keel joint. Initial leakage, if any, is moderate, and the keel's attachment to the boat remains unquestioned, as does the integrity of most of the support structure. The only instance of immediate substantial leaking we are aware of took place on an F32 following leading edge impact into granite at 6 knots. Even then the keel attachment was not in question; the leakage occured from adjacent hull cracking. This accident can be considered a reasonable extreme in testing the structure. Under the most likely conditions of impact the F32 keel structure will "fail safe", a commendable and most desirable characteristic.

Having failed, however, it is of profound importance that the keel be repaired correctly, without compromise. The experiences some owners have had with repairers have been dismaying. The stub keel and its support structure is a carefully engineered part of the hull, and repairs to it have to be made with a thorough comprehension of the damage and its effects upon the structure. Restoration techniques must restore the strength of the original structure, not just "fill the cracks." Resins used must be fresh, and the best and most suitable to the task. Glass cloth and tapes should be selected for applicability to this high stress area. Most important, owner experiencing keel problems should not assume that their yard- no matter how prestigious- necessarily has the understanding, attitude, and skill to make a proper repair. In one instance a well known southern N.E. yard put an F32 keel back up with silicone!- and changed $1800 for the job, which (inevitably) soon started leaking again. F32 recommends that owners insist that prospective repair contractors at least discuss the details of the job with TPI engineering prior to laying hand on it. If you don't have a good feeling about a contractor, find someone else, or try to get factory people to do the repair. An incompetent job that fails can make life worse than ever. For instance, silicone and polysulphide, if used, penetrate the surface and make impossible the subsequent adherence of epoxy or vinylester resin. The surface affected (underside of the stub keel) must be ground away until the contamination is removed- and the grinding removes thickness (and strength) from the stub keel, which is just what you don't want to do!. And polysulphide, in particular, is miserable stuff to try and remove. So if your keel joint is leaking, don't "temporarily caulk it." The caulking won't work anyway.

Indo's keel was stuck back on using Amicon keel epoxy, with filler added. Patric Mouligne, who sells TPI most of their materials through his RP Associates, Inc., also thinks highly of Interplastic's VE-81-10 shoc resistant, high elongation vinylester. For the "belly band" he recommends DBM-1208 doubl bias matted tape. In any case, consult the factory, as composite technology is moving very fast, and you want to use the best materials. Call Bryan Barer (401-245-1200), Greg Putnam (401-247-1050) or Mark Edwards (401-683-3500). □

Jim Taylor On Keels

Yacht Designer Comments on Keel Attachment and Load Distribution

Following Indolence's accident and subsequent repair, F32's editor became more and more intrigued- and impressed- with the technical challenge involved in hanging (stiffly) nearly 2 tons of lead from the bottom of a thin, fibreglass hull. We were subsequently very fortunate in being able to interview talented, articulate marine architect Jim Taylor of Marblehead on the subject of fin keel design and boat structures in general. Taylor is the designer of Lou Pocharski's phenomenally successful Taylor 38 Spirit, among other boats, and was also a consultant to TPI on the keel support structure and technical documentation of the J-30.

The F32's keel size and shape are representative of current stock yacht design, said Taylor. The swept back keel has an area (including the stub keel) of 20 square feet, and is a bit less than 6 inches thick at its widest point. The manner in which TPI attaches the keel stub is "as good a job as anyone in the industry." But the keel stub to keel joint will eventually (over years) crack, at least partway in, simply because of the disparate thermal expansion and moisture absorption characteristics of fiberglass and lead. Taylor feels that the tensioned keel bolts do all the work of keeping the keel from moving relative to its stub (which would cause gradual leakage up around the bolt threads). The epoxying of the joint is of importance primarily to forestall possible leaks and keep moisture (including freezing rain water in winter) out of the joint. Rabbeting the keel joint, as practiced on the F36 and later Freedoms, (see illustration) is of great value in forestalling the eventual cracking of the keel joint, and does, he feels, add some unit strength to the stub keel/keel assembly. For these reasons he also favors the addition of a fiberglass "belly band" around the keel joint (see article) as part of any F32 keel repair.

"When you hit hard with the leading edge of the keel it tries to drive its after end up into the hull. How well you fare depends upon how well this load is transferred into the hull, so that no single area of the boat is overstressed." Designers handle this, said Taylor, by building in a very strong structure of bulkheads and girders- mostly transverse, but sometimes also longitudinal- emanating from the keel sump area, under the cabin sole These not only force the hull to share the impact load, but also transfer some of it to the vessel's lower cabinetry, such as the berth fronts. By spreading the load as much as possible, the amount of momentary deflection of any part of the structure is minimized- hopefully, below the point at which it may crack or fail.

While many vessels are built to Lloyd's scantlings, the latter are not of much use in designing for stress concentration areas, and there are very few courses- including marine architecture syllabi- that deal with this area. Working from first principles, Taylor assumes an impact load and then designs to cope with it, using "basic mechanical engineering rules for dynamic loading." For the now-building Taylor 40, this means framing all around the keel, as earlier described, with a 1" thick girder aft above the keel feeding loads to the gunwales via a ring frame. Everything is tied together, including the engine beds.

In Indolence's accident the hull areas just forward and aft of the keel evidently deformed beyond their elastic limits, resulting in the hull cracks noted. The hull deflection was evidently also great enough to snap one of the bracing girders loose of the hull, and crack another. While the hull was under discussion the opportunity was taken to ask Taylor his opinion of the two-part hull construction method employed by TPI and many others, in which hull halves are individually laid up and then joined together. "Done right- and TPI does it right- it's as strong construction method as a single piece hull, and will frequently feature better workmanshi because the glassing crew is able to lay up very tight areas "in the open"- such as the keel sump. During assembly, the solid glass hull centerline joint is built up of successive, staggered, widening layers of glass that eventually fill a wide, shallow "valley" initially formed by the two hull halves. The two-part construction method also makes possible the fabrication of hulls with "tumblehome," as such hulls would be impossible to remove from a one-piece mold.

Taylor believes in fin keels and spade rudders. Not only do they reduce wetted surface, they also "lift" far better to weather than a traditional or cutaway keel, the aspec

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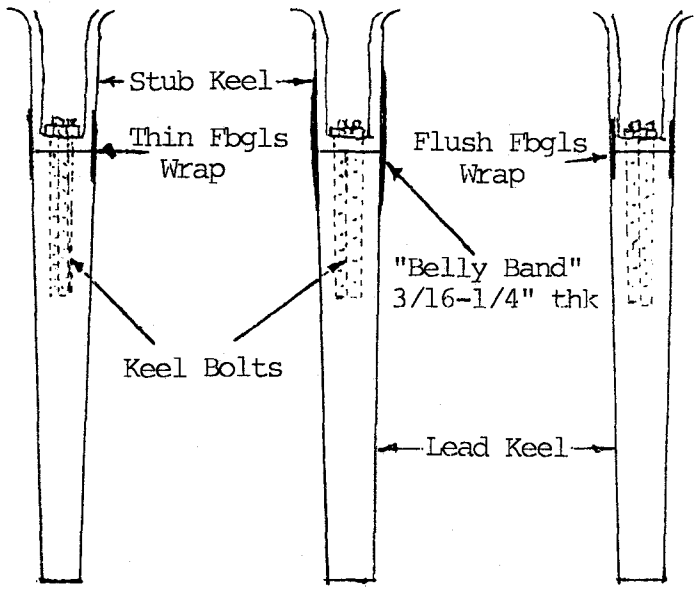
ratio of which is so low that it can hardly be called a hydrofoil. He also criticizes traditional keel designs for the way they carry buoyancy far below the water line with thick, buoyant structures and deep sumps. "The conservatives love'em- but those keels reduce stability", he said. Would he modify his "ideal" keel for an offshore vessel going to primitive places? "Yes, but I'd still use a fin and a spade- but the fin would be longer along the hull and stronger, similar to those used in Bill Lapworth's early Cals. The boat would still be fast and weatherly, but would be stronger in a grounding and would lay over better on a receding tide. It would not have extreme beam, and would be of moderate displacement." □

Cutaway Stub Keels With Lead Keels Attached



F32 FOR SALE

1984 deep draft F32 Freelance for sale, grey with grey deck, absolute mint condition with satin finished interior. Boat has North sails, Gunmount and spinnaker, new Autohelm 3000, Datamarine knot meter, depth sounder and wind instruments, Horizon Maxi VHF, Micrologic 2000 Loran with CDI. Other additions too numerous to mention. Asking $69,000.00. Boat is based in Westport, CT. Call owner Lew Weinstein, 444 Danbury Road, Wilton, CT.06897 * (203)834-0006; wk (203)783-7007

SCUTTLEBUTT

During a recent phone conversation, Paul Petronello volunteered the information that Freedom- at least at this time- is not planning a new model in the 32' range. This is good news, as it leaves the F32 with no nose-to-nose cat sloop competition. The closest match at the moment appears to be the F30, which is a fine boat- but to which a good used F32 appears to be a most viable alternative.

*

Shortly before hauling this fall it became obvious (from the noise) that Indo's shaft strut had loosened, again. Following the lead of Roger Lopata and others we will this time tighten up the nuts with Loctite- and we may back out the bolts first and put epoxy under their heads. What causes the loosening? For a while I thought it was associated with the occasionally flapping blades of Indo's folding prop. But I note that Roger's prop is solid, so that theory is doubtful. Anyway, we may put on lock nuts, too!

*

LETTERS

Dear Don:
Fantastic job! I'm holding off on my own mainsheet mod to see how yours comes out.Also plan to change jib sheet to cam cleat, but that should be very easy. The Seattle area seems to have the most advanced control and monitor systems for 12V battery charging. I have a Cruising Equipment "Bullet Proof" system on my charger controller and monitor, and am now installing a Cruising Equipment 3CLR 55A alternator to feed my 215AH and 95AH batteries. And the boat has solar and water driven charging systems to be integrated, so a new power panel is also in the works. I'll let you know how it works out.

Brian Guptil, #68 Dolphin, Seattle

A belated letter from Patrick Mouligne:

First, thank you again for a good laugh reading the July issue. The racing on Long Island Sound was too close for comfort, and I could not stand the thought of you passing me again, so I decided to retire from the F32 fleet unbeaten to date. I am tickled to announce that I bought Freedom 44 #15 yesterday (Sept 15). I always loved that boat. I feel I will still be part of the Garry Hoyt fan club, and I'm looking forward to maybe a little more comfortable and forgiving yacht offshore.
It is with a broken heart that I'm going to have to part with Sloop du Jour, and the transition is going to be difficult as I love my boat very dearly.
Regarding improvements to the F32, I think it might be appropriate to mention that the PVC tubing on the headstay is not my original idea, but Peter McCrea's. I appreciate the credit you gave me but
Peter is the one who came up with the idea.
Again, Don, thank you very much;please keep me, if it's okay with you, on your mailing list as I certainly will consider myself forever an F32 owner, and I hope you will still consider me a part of this small family.

Sincerely, Patrick

Patrick will, of course, stay on the mailing list. And, in view of his reknowned accomplishments with the F32, and the fame he has bought to the marque- we have decided to accord unto Patrick the life title of F32 "Owner Emeritus". -Ed.

Dear Don:
You have written numerous times about mast twisting problems, but you have said little about the cause of it. When I first got my boat the Haarstick people made it clear that I was to put a figure 8 knot in both the mainsheet and the jibsheet to prevent the boom or Camber Spar from going forward of perpendicular to the centerline of the hull. I have since added a couple of stitches to the knots to make sure sure they're not undone by mistake.

I just received a new Edson catalog that carries a page of steering system maintenance instructions. I recommend it to F32 owners.

Don Phelps, #42 Schizanthus, Rochester NY

When the boom is out a ways the combination of the mainsheet tension and the sail tension create a substantial compressive load down the boom, towards the gooseneck. This load pushes on the gooseneck, which has about a 6" moment arm to the center of the mast, and tries to twist the mast. The farther out the boom is (and thus more square to the gooseneck) and the greater the sail and mainsheet tension, the bigger the twisting load on the mast.

-Ed.

LETTERS (cont)-

Dear Don:
Here are some observations on the content of the Nov. issue:
- Sailing the boat on port tack while running the engine to charge batteries cost us an impellor when we first got the boat. I agree with Patrick in that regard.
- The fuel filter must be seated carefully and tightened securely to prevent the slow air leak mentioned.
- Advancing the throttle as little as 50 rpm will get rid of the false overheat alarm. I thought it was a harmonic vibration in the alarm unit until you wrote on the subject.

Lew Weinstein, #31 Freelance, Westport, CT

Lew's #31 has the cooling water intake to port. This was changed later to a spot to starboard of the centerline. The "false overheat" probably isn't false. But raising the engine speed may make the cooling system work enough better to keep the alarm from sounding. ??

-Ed.

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