Hydrofoil Pioneers...

The Rise and Fall of Miami Shipbuilding Corporation

by Robert Johnston

(Last Update 14 Jul 03)

[This article was published in two parts; the first part in the Summer 1997 issue of the IHS newsletter, the second part in the Autumn 1997 issue. Both parts are included here. -- Editor]

Part I (Published Summer 1997)

After graduating from MIT in 1948, I was assigned to the New York Naval Shipyard, where I engaged in converting the Essex Class aircraft carriers from piston aircraft to jets. After two years in Planning and Estimating, I became the Design Officer for the lead design of these conversions. All indications were that I was headed for a naval career in aircraft carriers. In 1952, I was being transferred to the the aircraft carrier type desk at the Bureau of Ships when I got a call from CAPT Cliff Grimes. I had worked for him in New York, and he was now Assistant Chief of the Office of Naval Research. He said, "Johnny, how would you like to be the US Navy s Hydrofoil Project Officer?" I responded, "Cliff, I don t know what you are talking about." He answered "Look it up, you are it." With that, I was off to Washington DC to be the Hydrofoil Project Officer in the Office of Naval Research.

My assignment was a rather rude awakening as to the workings of the Research and Development (R & D) world of the US Navy. What I had assumed was to be a technical assignment was foremost a diplomatic one. The US Navy had never taken hydrofoils seriously in spite the German navy's achievements in World War II. Dr. Vannevar Bush, scientific advisor to President Truman, had a major input to the Navy s R & D budget. Based on some erroneous data, he had concluded that in any future European involvement the Navy needed hydrofoils for rapid transits to Europe and to avoid the growing menace of the submarine.

Dr. Bush had obtained funds to build a destroyer-size hydrofoil, and had founded Hydrofoil Corp. in Annapolis MD to undertake the necessary hydrofoil R & D. Gibbs and Cox was the design activity, and Bath Iron Works was to be the builder. The Navy recognized that the project was not practical, creating a dilemma for the development team, who had to keep Bush in the Navy's corner and not upset the Navy's entire R & D budget. In fact, the Navy had classified the hydrofoil program to avoid divulging what many considered was a total waste of money. My orders were to report to Dr. Bush once a week and keep him informed of the Navy's hydrofoil activities.

With this introduction to my new assignment, I began to explore the overall US Navy hydrofoil program. It was much broader than the Bush destroyer project. The Bureau of Aeronautics was interested in using hydrofoils to improve landing operations of seaplanes. Gordon Baker and the University of Minnesota were studying Vee foils. Bill Carl was pursuing a high speed vehicle of interest to naval aircraft applications. Miami Shipbuilding Corporation (MSC) had made an arrangement with Christopher Hook, an eccentric British hydrofoiler, who had developed a submerged-foil craft controlled by surface feelers. Work was underway to develop an electronic automatic control system for a submerged foil system at Gibbs and Cox. The consensus of this hydrofoil community was

that despite the impracticality of Dr. Bush's destroyer plans, there was still an opportunity for the program to provide high speed naval capability in rough seas.

With the Korean invasion, the Navy became concerned about the speed of the amphibious forces to transit from ship to shore. So the need for higher speeds for the amphibious craft became a requirement. To increase the speed of the LCVP personnel carriers became the Navy's first operational requirement for hydrofoils. An operational requirement and request for bids was prepared. The major requirement was for these personnel carrier landing craft to become capable of making 35 knots from ship to shore rather than the existing 8 knots. The craft had to be capable of landing on the beach, but did not require amphibious operations. To many, the MSC proposal was a surprise as the most feasible and technically sound bid submitted. Their proposal won the technical competition based on the Hook hydrofoil concept over such other competitors as Gibbs and Cox, The Hydrofoil Corporation, and Baker Manufacturing. Negotiations took place, and a contract was awarded to MSC to build a full scale hydrofoil LCVP(H). This contract was later modified to include a manned scale model construction and test prior to the full scale construction. This model was named the "da/dt." It should be noted that based on the results of Gordon Baker's test craft *HIGH POCKETS*, a second contract was let to the Baker Manufacturing Company for construction of a second LCVP(H) using surface-piercing Vee foils.

With the award to MSC for the lead in the landing craft program, I started to spend more time visiting and working with the MSC technical staff. This group, headed by Jean Buhler and including engineering professors from Miami University, was most impressive for a small shipyard. Not only were they a talented group, but they made visits by Naval personnel very pleasant. After a busy day in the office, an evening meal together was always a pleasant affair, and many good ideas were left sketched on dining napkins. It was through this association that I got to know the Buhler brothers and their very interesting father, Emil. In fact, on several occasions I was invited to attend the daily family meeting on events of the day that took place with an evening beverage at Emil Buhler s delightful and interesting home.

After an eventful two years with the Office of Navy Research, I was ordered to the Bureau of Ships. My time in ONR had given me the opportunity to look at hydrofoil activities all over the world. This included getting to know and work with all USA hydrofoilers including many dedicated and technically strong government personnel. Also a trip to Europe was ordered to study the remains of the German WW II effort, to visit the first commercial operations of a hydrofoil built by Supramar in Switzerland, and to learn as much as we could about the hydrofoil work that Russia was doing. Phil Eisenberg accompanied me on this venture, and Dr. Georg Weinblum, a former paper clip scientist at the David Taylor Model Basin who had returned to Germany and was head of the School of Naval Architecture at Hamburg University, was our guide. My assignment to the Bureau of Ships was a bit of a disappointment, as I was designated to work on the landing craft desk. This would be the type desk to which the hydrofoils under construction would be assigned if and when they joined the fleet. Time and events had passed me by to return to the world of aircraft carriers. It was obviously a long time before the LCVP(H) would be fleet ready. In the meantime Navy storage spaces were filled with deteriorating landing craft. My assignment became one of preserving these assets for future Naval needs. Compared with being the hydrofoil project officer of the US Navy, this was not an exciting assignment.

With these thoughts in mind, along with concern over the family life with me as a naval officer and the fact that naval pay was not outstanding, I began to think about returning to civilian life. This was a difficult decision as both my wife and I thoroughly enjoyed navy life, particularly the group of people, engineering duty officers, with whom we were working. Several opportunities had been offered to me to pursue the development of hydrofoils, but I had not given them any serious consideration up to that time. We finally decided to explore civilian opportunities that had a future potential. With this I began to inquire and look at where I might find a future business home. Several opportunities were presented

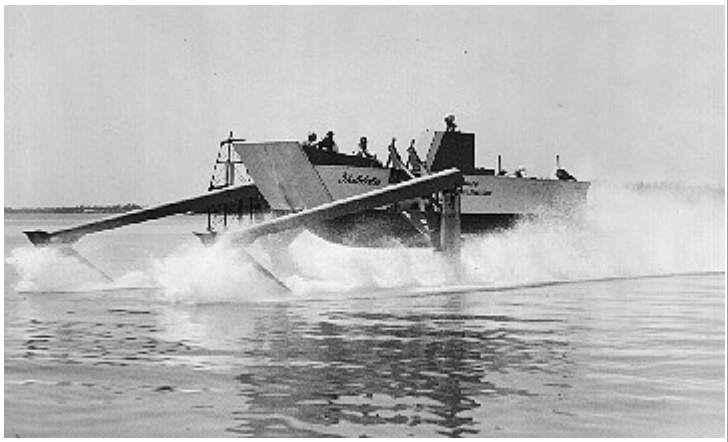
to me. Bick Moorman, MSC's representative in Washington DC, learned of my activities and came to me with an offer of an assignment with MSC. Studying MSC led me to conclude that this small shipyard had the potential to succeed in the hydrofoil world. It had the capability of building what I foresaw as the Navy's future requirements for hydrofoil craft and an excellent technical staff. I considered two other opportunities: one, with Chrysler Corp., which was interested in establishing a future hydrofoil group, and the other with my friend Bill Carl, who owned Dynamic Developments on Long Island NY. At that time Bill s workload could not really afford another employee. With that I went to Miami to visit Paul Buhler, the treasurer of MSC. Paul was most open with me and discussed the financial position of MSC. Financially MSC was not a completely sound corporation, but the future prospects were good, and there were no insurmountable problems. He and his brother Ted, the president, offered me a position as Vice President of Engineering with responsibility for the hydrofoil programs. Jean Buhler said he was comfortable with my assignment and the prospect of our working together. After some serious family discussions, I resigned from active duty and joined the Naval Reserve (I am pleased to be able to say that after 25 years of service I retired as a Captain USNR). With this, in the summer of 1954 I joined MSC.

From my Navy background I knew that submerged foil systems with electronic automatic control were the way of the future. Looking at MSC's LCVP(H), my initial plan was to develop a suitable automatic control system for the craft. The only other known system at that time was being developed at MIT for a Gibbs and Cox runabout. We therefore decided to develop our own system. We hired Walter Keller as an electronic developer to head this effort. We found out that Ted Rose, a strong technical innovator and well known by the Navy, was available. He had been Dr. Bush's Chief Engineer at the Hydrofoil Corporation when a borrowed aircraft autopilot had been installed on their test craft *LANTERN*. He agreed to join us as Chief Engineer and brought in his son Rod, a bright engineering undergraduate, who initially worked for us during his summer vacations. Ted was also able to bring with him US Navy support for some study contracts that included retractable, right angle gear drives and designing foils for fatigue life that supplemented our engineering income. We needed a hydrodynamicist and were fortunate to lure Ray Wright who had a background in seaplane development to join us. With the technical staff complete, full attention was devoted to making the Navy s LCVP(H) program a success. The name for this craft came from Jean Buhler who from his friend, Walton Smith, learned of a long-legged insect found far at sea called Halobates Sericeus.

The design work on *HALOBATES* was well underway. Jean Buhler's knowledge of wooden hull ship design proved useful in the design of the hull, particularly the fitting of the bow door. Retraction of the foils and over-the-stern drive were particularly difficult. The operational schedule for the design called for the landing craft to leave the mother ship with the foils and drive fully extended and as the craft approached shallow water to continue to fly with the equipment partially retracted. Finally before hitting the beach all was fully retracted but with craft underway hullborne. In the meantime the design of the Hook feelers which controlled the foils became more cumbersome as they were scaled up from the test craft. This put more emphasis on the need to eliminate these feelers for any craft that would be acceptable to the Navy. In a lab equipped for development of the automatic control system, a simulator was installed along with one of the first computers in Miami. The heat was on the staff to come up with an acceptable system.

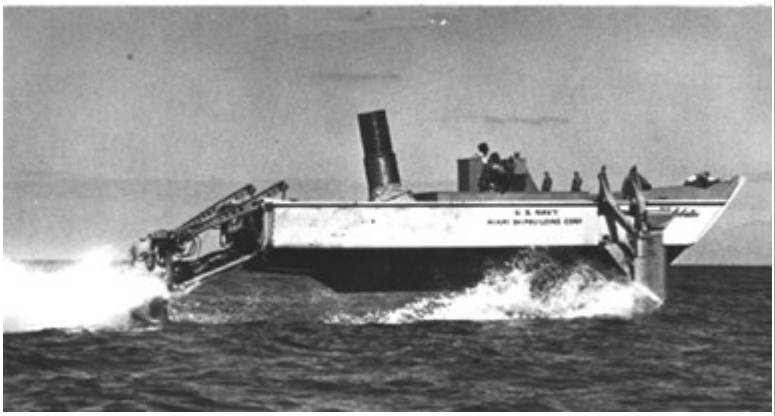
In 1957 *HALOBATES* was completed and ready for sea trials with its mechanical feelers for foil control. Some time had been lost when the over-the-stern drive that was designed and built for us by Cabi-Cattaneo of Milan, Italy	

failed its test. Ted Buhler had gone over to witness these tests and discovered that the completed design would not retract. The gear train locked up on retraction. This caused a major modification which included having to accept some bearings with shorter life than we had initially specified. It also put Senior Cattaneo into mourning as he had designed the gear train, and at that time he was one of the few gear designers who had produced right angle drives. Anyway, trials finally got underway in 1957, and *HALOBATES* demonstrated 35 kt in 5-foot waves, good banked turning characteristics, and the ability to partially retract and remain foilborne. However any seaman who looked at the cumbersome feelers, used that argument to reject the concept.



HALOBATES with "Feelers"

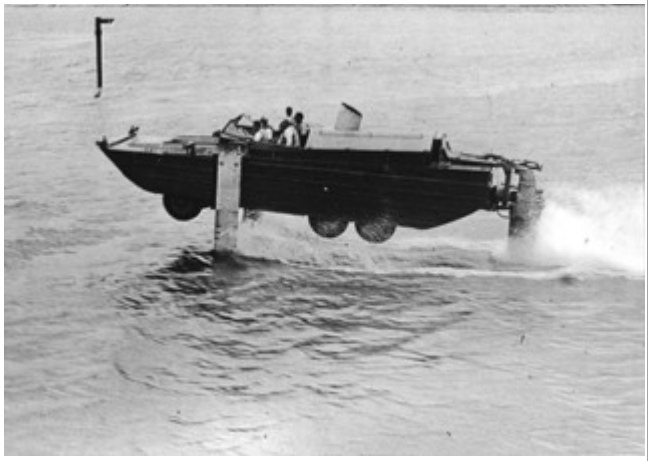
Fortunately an automatic control system (ACS) was ready for installation and sea trials. The successful trials allowed the Naval personnel who witnessed them to visualize a practical naval hydrofoil. At the same time the Navy became interested in British-developed air cushion vehicles that could transit ship to shore, then crawl up on the beach. Naval interest in the LCVP(H) waned as the Navy studied air cushion vehicles as landing craft. However, a final contract mod allowed *HALOBATES* to serve as a sea trial test bed for gas turbine engine. Thus MSC installed and tested the first gas turbine on a Naval vessel (a Lycoming T-53).



HALOBATES with ACS

The successful *HALOBATES* sea trials led the US Army to become interested in applying foils to their landing craft. Colonel Frank Speir, one of the fathers of the Army's DUKW, thought that foils could increase the sea speed of this vehicle. He and Rod Stephens, Jr. of Sparkman and Stephens visited us in Miami, participated in one of our

HALOBATES sea trials, and initiated the contracting process to get a DUKW flying on foils. This was to be a MSC project, but — since the Army foresaw a production contract for DUKWs on foils and since these were wheeled vehicles for land operations —we had to accept the Lycoming Division of AVCO as the prime contractor. They had no hydrofoil experience, so the initial design, conversion, and sea trials became MSC's responsibility.



Flying DUKW

Our first concern was whether a DUKW could achieve take off speed without swamping, and if it could, what was the power required for take-off? The Army was willing to loan us a DUKW for tests if we could provide a ship to tow it through the speed range of interest. We got the Navy to make an AKA, which was a converted DE, available with a full Navy crew. Trials were scheduled to be run out of Fort Eustis on Chesapeake Bay. Jean Buhler designed and made a dynamometer to measure the drag of the DUKW, and we were off to tow it to a speed of about 20 knots.

We arrived at Fort Eustis to find our DUKW being readied for towing. Much to our surprise we found the Army personnel hurrying about with much paperwork. The Navy's AKA was berthed at the Fort, and we were assigned berths on board the ship. Now a little aside: During WW II, I was in charge of a design office manned by Naval Officers and Bluejackets. We were given special projects that the Navy did not want to put into civilian design groups. One of our design projects had been to prepare plans to convert DEs to AKAs. This project was primarily redoing the internal arrangement of the DE to provide berthing and living space for transporting Army contingents. In redoing the forepeak area to accommodate troops, we had to put some of the bunks closer together than allowed by Navy design practice, making it very difficult occupants of these berths to turn over. When this spacing finally was finally approved I can remember saying "Well, I know I shall never have to sleep there." Well guess where the berth was that was assigned to me... one of the "too close" berths!

Finally all arrangements were complete, the dynamometer was installed in the tow rig, and we were ready to head to sea to conduct the towing tests. The underway trials lasted about two days, and we were able to gather the necessary data for the design of the propulsion system. To our pleasant surprise the DUKW planed beautifully, and we got the craft up to take-off speeds of interest without any swamping. So a delighted test crew returned the DUKW to Fort Eustis. To our surprise we were greeted by unhappy Army personnel. Having assumed that the test craft would be lost during the towing, they had assigned all unaccountable material for their DUKW operations to our loaner. Now they had to undo all that paperwork!

Using the data from the trials and adapting data from *HALOBATES*, including its autopilot, and using a Lycoming T-53 gas turbine for main propulsion, a flying DUKW was designed, and successful demonstration trials were conducted in Miami waters. Mel Brown, a former Navy colleague of mine, was hired at MSC to be the project manager for the program. Speeds in excess of 30 kt were demonstrated (compared with the 5 kt of the conventional DUKW).

Seeing the craft rise from the water with its wheels in place was quite a sight. Our measured mile was

along the Miami Beach Causeway, which had a road running alongside. I think we caused some near accidents as drivers saw this cumbersome vehicle rise from the sea and come to about the same speed as they were making in their autos.

With the success of these trials, the US Marine Corps became interested in increasing the waterborne speed of their amphibian vehicles. Later on, the Lycoming Division of AVCO was to build LVHX-l based on the hydrofoil principals demonstrated in MSC s Flying DUKW design.	
Also, Food Machinery Corp. (FMC) built LVHX-2 using surface-piercing foils. MSC did not participate in these ventures for reasons that are included in the rest of the story.	

Part II (Published in the Autum 1997 IHS Newsletter)

These projects kept Miami Shipbuilding Co.'s (MSC's) hydrofoil activities busy and successful from 1954 to 1958. Another interesting contract was for a clandestine hydrofoil craft that could be launched from a submarine's torpedo tube. The craft was to be so rigged that two men could assemble the hydrofoil rig in the water and proceed to shore for their operation. The craft was to be capable of being submerged and hidden underwater while the shoreside operation was underway. The two men then returned to the submerged craft and proceeded foilborne back to the submarine. MSC was assigned the craft and hydrofoil design, and the outboard marine industry got the task of coming up with a suitable outboard motor that could withstand the submerged period. This project became known at MSC as the "Cigar Boat." We built and successfully demonstrated the craft with Prof. John Gill as the project engineer. John, in a hunting accident as a boy, had lost one arm. John also insisted on being the test pilot for the trials, so the controls were cleverly designed for one-handed operation. MSC successfully completed their part of the craft, but the design of an outboard motor capable of withstanding and restarting after a submerged period was never developed.

So from 1954 to 1958 MSC was busily occupied with interesting and challenging hydrofoil projects. I was elected to the Board of Directors, and while I was interested in all the work the yard was undertaking, most of my time and energy was focused on the hydrofoil projects. We continually

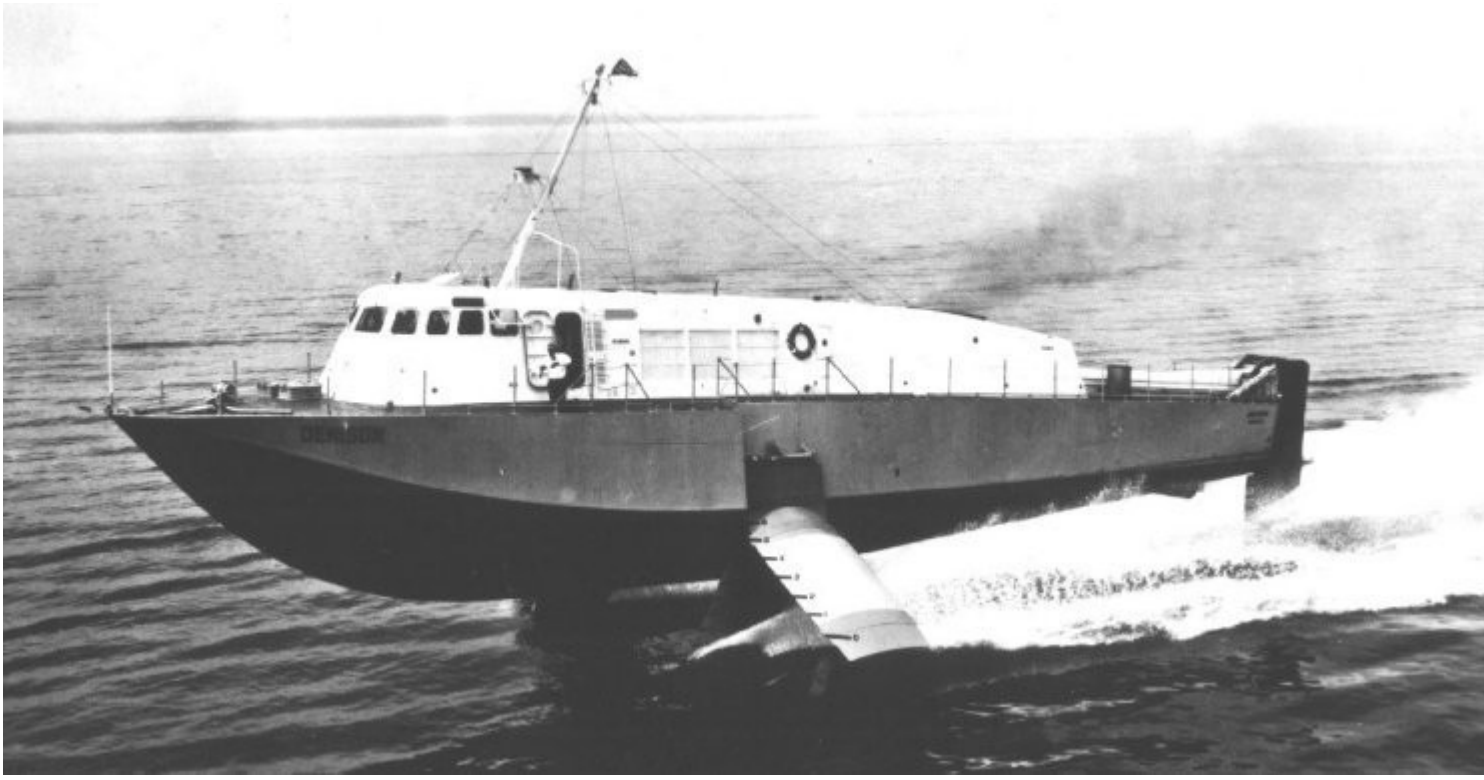
worried about keeping a substantial workload in the summer when the yachting fraternity was centered up north. So one of the Board's primary interests was to diversify. MSC had for a number of years built a cement block making machine that could be expanded (by adding components) from a one-man machine to an automated producer of blocks. A number of these machines were in operation, including many in Cuba. MSC also made a plow that could turn Everglades swampland into producing fields for agriculture. This plow, pulled by a tractor, could plow up and pulverize the coral and spread it out so that planting could take place. So these products and others provided a non-seasonal work load for the yard. Of course our primary workload came from the repair and maintenance of yachts and small inter-island freighters. MSC had a particularly good reputation with the sailing fraternity. When the Southern Racing Circuit moved into Miami for the winter season, MSC was able to undertake the majority of the yard work required for these ocean racing yachts.

Recognizing that through the hydrofoil effort we had established a rather large and talented engineering organization, we were concerned about keeping an adequate workload to maintain this capability. We therefore decided to establish a subsidiary, Miami Engineering Corporation, to provide engineering services to the many small industries in the Miami area. To incorporate such an organization we had to have a licensed engineer as an officer of the corporation. So Ted Rose and I started studying to prepare ourselves to sit for the examination. We went to Jacksonville FL and sat for three days taking the tests. Fortunately, we both passed. I was made the president of Miami Engineering Corp., and we were incorporated. This organization undertook some work for Eastern Airlines but did not interest many other Miami organizations in using our engineering skills. We did become a purchasing agent for a number of Latin American companies, using our skills (and discounts) to attract customers. Among other things, we learned how to design pumping systems for the transfer of molasses from shore to ships located some distance off Cuba.

Two hydrofoil projects of interest began to take place. The US Maritime Administration (MARAD), aware of the commercial interest in hydrofoils in Europe and the successes of the Navy's hydrofoil program, developed a growing interest in this promising type of waterborne transportation. MARAD's Coordinator of Research Charles R. Denison was an enthusiastic supporter of this concept of commercial transportation. He awarded Grumman Aircraft Engineering Corporation an extensive parametric study for the future use of commercial hydrofoils. Grumman had acquired half interest in Dynamic Developments, Inc., Bill Carl's company. Bill had been instrumental in encouraging the parametric study. When Bick Moorman and I went to see Mr. Denison, he informed us that to accomplish what he wanted to do he had to have a company stronger than MSC as his advocate. We essentially did not have enough political punch or financial support for his planned efforts. The purpose of this parametric study was to determine the type of hydrofoil craft best suited for future express cargo and passenger applications. This led to the design of *DENISON*, an 80 ton experimental craft with a speed of 60 knots. MARAD had budgeted US$7.5 million for the design, construction, and test of this craft. Before the contract could be awarded, Charlie Denison died. With his demise, the planned funds became US$l.5 million. Bill Carl agreed to take the contract at Dynamic Developments at this price with Grumman s backing. Bill was convinced that he could get other companies to contribute their expertise and products to get aboard this new transportation concept. Bill was successful at this, but he risked everything he owned to get Grumman's backing.

MSC watched these procedures with interest and tried to get into the action. We could not undertake such effort without being fully paid. We even contacted Supramar of Switzerland to become a US builder of their designs. They sent Senior Carlo Rodriquez to Miami, who was Supramar's primary licensee the Rodriquez Shipyard in Messina, Italy, to negotiate an arrangement whereby MSC could offer a design to MARAD. We were never able to make Rodriquez understand the cost and time it took to get a commercial design approved by the US Coast Guard. Also, Supramar wanted a guarantee that

we would build a minimum of five hydrofoils if we were granted a license. So MSC was forced to watch from the sidelines as the MARAD program developed.



Grumman-Built MARAD Hydrofoil, *HS DENISON*

The other hydrofoil program that was developing was the US Navy's plan to build a hydrofoil craft suitable for anti-submarine warfare. In late 1957 the Bureau of Ships (BUSHIPS) Preliminary Design Branch began the study of a design that would ultimately become the PCH. MSC provided consultation to this group as the design advanced. We were convinced that this project was just right for MSC, and that this was where our future lay.

At about this same time, several unfortunate mishaps in the yard took place. We underbid and overran a contract to overhaul an Air Force rescue boat and, at the same, time ran into cost difficulties on a major project to modernize a State of Georgia boat. During this same period, while launching the schooner *NORTHERN LIGHTS*, number 4 railway ran off the track. These events put MSC into a critical financial bind. The Navy, who followed our financial status closely with their frequent auditing of our contracts, became concerned about our ability to perform the work that we had under contract. MSC was informed that to undertake future Navy work we would need a change of management. Particularly in jeopardy was our chance to compete for the PCH. This led to a lengthy and emotional Board Meeting in which the situation was discussed from many angles. The outcome was that Ted Buhler would step aside as president, with me as his replacement. Paul Buhler would resign as Treasurer, and a Navy accountant would be brought on board as his replacement. Bick Moorman was made a Vice-President to work closely with the Navy to assure them we were taking all steps to be qualified to undertake the PCH.

Now my perspective of MSC took on added responsibilities. I learned what it meant to meet a weekly payroll. In reviewing our financial position, I found out that if all our accounts receivable were current we really would not have a financial problem. Customers such as Arthur Vining Davis, probably the richest man in Dade County, was a good customer buying some of the machinery we produced as well as maintaining his yacht. When he was approached about getting his account current he replied, "I *am* current; my debts are paid on a l20-day basis." When I informed him that all of our suppliers expected to be paid on a 30-day basis, Mr. Davis comment was, "If you can t accept my terms, I ll have to go elsewhere." I was also surprised at the number of wealthy yacht owners that owed us considerable amounts of overdue monies. In discussing this with northern shipyard owners, I found out that there were a number of wealthy yacht owners who were using the shipyards to finance their yachting. Working on collecting these accounts became one of the new President's primary responsibilities. Some progress was made in this effort, enough so that Bick Moorman could report to us that we would be able to be a bidder on the forthcoming PCH program. In late 1959 the bid package was received at MSC. Based on a set of contract plans and defined government supplied items, the contractor was to quote on preparing the detail design and building and testing the hydrofoil. Rumors were running in the industry that a buy-in bid was to be expected, such as Grumman had done on the *DENISON* program. With this knowledge I requested a meeting with Admiral James, Chief of BUSHIPS. I had known the Admiral since his days on the Carrier conversion program. He was quite cordial, and when asked about the buy-in rumor, he said that only responsive bids would be acceptable to the Navy. A responsive bid would be one that, based on Navy estimates, could be built for the bid price. With this, MSC went to work on a bid. Considerable time and money was devoted to this task, as winning the PCH contract was the future of MSC. Bids were submitted in early 1960. MSC s bid was US$4.1M.

We were excited when we received a telegram saying to gather our material and come to Washington DC to negotiate on a contract for the PCH program. While we were getting ready to enter into negotiations, a second telegram arrived saying that MSC was no longer in the running for a contract and not to come to Washington. I immediately went to Washington to visit again Admiral James. When I met with the Admiral, he also invited the BUSHIPS officer in charge of procurement to attend the meeting. Admiral James repeated what he had told me in the earlier meeting. Considering our price to be responsive, we had been invited to negotiate. Then procurement informed him that since there were lower bids, these bidders had to state that they could not build the PCH for the price submitted in order for their bids to be declared non-responsive. Boeing was the low bidder at US$2.1M. Though MSC knew — and thought the Navy knew — that the material requirements could not be met for US$2.1M, Boeing said that they could build the PCH for the quoted price. And so in June l960, Boeing was awarded a contract for US$2.08 million to build the PCH.

This was a terrible blow to MSC. Our future in the hydrofoil world looked most discouraging. With the approval of the Board and the major stock holders, we undertook to sell MSC to a major company. Our initial contacts brought several responses of interest, among them Chris Craft, Loral Electronics, Grumman, and AVCO. Although Loral put a representative in the plant for several weeks, only Grumman and AVCO showed true interest.

Grumman saw the advantage of a shipyard building *DENISON* and considered moving all their hydrofoil personnel and assets to Miami as their hydrofoil facility. However the facts that MSC was a unique shop, that Grumman was the only major aircraft manufacturer that was non-union, and that part of the property was leasehold stopped their interest.

AVCO was looking for help and a place to build the LVHX. There was serious discussion within the Lycoming Division as to how to handle the forthcoming contract for that effort. The Vice President for Engineering urged buying MSC to get the experience of MSC's technical staff. Lycoming's Chief Engineer took the position that they had learned enough as prime contractor on the Flying DUKW

program that they could go it alone. After very serious discussions, a proposition was worked out for the purchase of MSC to be presented to the AVCO Board. At the Board meeting to take up this issue, it was brought out that, just a year earlier, AVCO had sold a shipyard they owned in New Jersey. At that time they had convinced their stockholders that it was a smart move to get out of shipbuilding. On this basis they turned down the purchase of MSC.

These decisions led to the last Board meeting of MSC that I would attend. It was held at Kenilworth Hotel on Miami Beach. The Kenilworth was a hotel owned by Leo DeOrsay, who was a stockholder of MSC, and Arthur Godfrey, for whom Leo DeOrsay was a financial administrator. MSC had benefited from this arrangement from time to time. At this meeting I announced that MSC could no longer compete in the hydrofoil world, and that I was resigning as president of MSC effective July 31, 1960.

Knowing the condition of MSC, Grumman had been after me for some time to join them. I received calls from others, but only considered joining Grumman. I was also greatly concerned about the personnel of MSC, many of whom I had convinced of MSC's future to get them to join. I talked with Grumman representatives and Bill Carl regarding the talents of MSC's technical staff. With full agreement all technical personnel of MSC were offered jobs at Dynamic Development to work on the *DENISON* contract. So when I went to Long Island NY, most of the technical staff went with me. Most of those who went North had learned to like Florida living too much to stay. But I stayed with Grumman until I retired along with Rod Rose and Ray Wright who became leading engineers in automatic control systems and hydrodynamics. We arrived at Dynamic Developments on August 1, 1960. Our first efforts were to convince Bill Carl to add an automatic stability system to the *DENISON* surface piercing foils. On 30 August 1960 I took off for Italy as the program manager for a joint venture of Grumman and Rodriquez to produce an Italian Navy Hydrofoil. And so one career ended, and another began.

- *IHS member Jean Buhler is putting together the entire history of MSC. Anyone who, like Bob Johnston, is able to contribute information of this effort is encouraged to contact IHS.*
- *Guy Ellis, Editor of* Air Heritage*, Official Journal of the Friends of the SAAF Museum in Cape Town, has written the history of the South African Air Force's Motor Boat Section. Crash boats manufactured by Miami Shipbuilding were used by this service. Mr. Ellis welcomes additional historical input on this subject. According to the Crash Boats Webpage, "The Miami class crash boats were a design by Dair N Long of the Miami Shipbuilding company, a lineal descendant of the fast rum-runners the Mafia had commissioned during prohibition. They were commissioned by an RAF order for 91 of these vessels. Ultimately Miami Shipbuilding was to deliver 560 of these craft to various customers, the last being delivered as late as 1956. The Miami class were 63 foot in length (19.2 metres) and displaced 22 tonnes. The hull was a hard-chine planing design. The vessels themselves were of triple marine-ply with madapolin cloth between the plywood. The whole assembly was nailed together with copper nails. They were powered by four Kermath V12 petrol engines, each giving 550 hp. This enabled them to reach a speed of 42 knots. Their normal range was 400 nautical miles. The SAAF purchased 18 of these craft from the USA during WW2. At least 7 of these are still to be seen in South African waters as pleasure cruisers." Another worthy information source on this subject is Leslie R. Jubbs' "The Forgotten Era of Men and Vessels."*

Erratum

[14 Jul 03] My name is Dean Speir, son of Colonel Frank Speir, Project Engineer of the Army's Amphibious Warfare Program until the time of his death on 8 July 1956. Along with Rod Stevens Jr. *[sic]* (1909-1995) and Dennis Puleston (1905-2001), Colonel Speir was one of the progenitors of the Army's DUKW at the start of WW II. DUKW aficionado Jim Mason referred me to your site, where I note that his name is incorrectly referenced as "Colonel Spears". I wonder if I might prevail upon one of you gentlemen to make those corrections on your site. We would be most appreciative. -- Dean Speir (email withheld).

Response...

[14 Jul 03] Thank you for this correction. -- Barney C. Black (Please use the BBS to reply)

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International Hydrofoil Society

PO BOX 51 - CABIN JOHN MD 20818 - USA

webmaster@foils.org

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