Index to Series of Taped Interviews with Chief Machinist's Mate William Badders, USN (Ret.)

- Asiatic Fleet: Lack of master divers in early 1930s, pp. 44-45; athletics, pp. 59-65; personnel anxious to get off Asiatic Station, p. 66
- Athletics: At Great Lakes in 1919, p. 4; at Pensacola in early 1920s, pp. 4-5, 7; golf in Far East in 1930s, pp. 59, 61, 64; <u>See</u>: Football; Baseball; Crew Olympics Athletics—Naval Academy; Anecdotes about crew and coaches in the early 1920s, pp. 10- 12; head football coach in the mid-1940s got coaching experience with submarine division team in mid-1930s, p. 69
- Badders, Chief Machinist's Mate William, USN (Ret.): Awards and commendations, pp. 3, 26, 30, 49, 102-104; health, pp. 3 0, 65-66, 68; family, pp. 44, 106, 143, 155-156; enlists in 1918 and sent to Great Lakes, pp. 1-2; service in battleship <u>Wisconsin</u> (BB-9), 1918-1919, pp. 2-4; reports for duty at Great Lakes in 1919, p. 4; squadron maintenance work at Pensacola in early 1920s, pp. 4-7; engineer in battleship <u>Kansas</u> (BB-21), 1921, pp. 7-9; engineer in <u>Reina Mercedes</u> (IX-25) at Naval Academy, 1921-1924, pp. 10-13; joins engineering department of <u>Falcon</u> (ARS-2) and helps with <u>S-51</u> (SS-162) rescue, 1924-1926, pp. 13-29; stationed in <u>Reina Mercedes</u> (IX-25) at plays semipro footbal1, 1926-1927, pp. 29-30; returns to the <u>Falcon</u> (ARS-2), 1927-1928, pp. 30-36; student and instructor at new diving school at Naval Gun Factory, 1928-193 0, pp. 3 6-37, 39-40; master diver in <u>Falcon</u> (ARS-2), 1930-1931, pp. 38-44; master diver in <u>Pigeon</u> (AM-47) in the early 1930s, pp. 44-66; master diver in <u>Holland</u> (AS-3) in the mid-1930s, pp. 66-71; joins experimental diving unit in Washington in late 1930s, pp. 71-73, 75-104; master diver- salvage master as civilian in the Panama Canal, 1940-1962, pp. 73-75, 98-99, 104-157

Balloons: Free and observation balloons at Pensacola in the early 1920s, pp. 5-6

Barracudas: Problem to Navy divers off Key West, pp. 51-52

Baseball: Pensacola Air Station baseball team among first transported to games by air in early 1920s, p. 5; Badders plays on professional team in Manila in early 1930s, pp. 59, 61-64;
Badders plays with submarine division team in China that wins championship three years in a row, pp. 59-60, 65; popularity of game with naval personnel in Far East in 193 0s, p. 60; quality of black league in 1930s, pp. 62-64; See: Gehrig, Lou; Paige, Leroy "Satchel"; Williams, Ted

Blimps: See: Lighter-than-air

Brooklyn Navy Yard: See: New York Navy Yard

- Brumby, Rear Admiral Frank H., DSN (USNA, 1895): As Commander Submarine Divisions Control Force in late 1920s had to field outcry by media about <u>S-4</u> (SS-108) crew members who were not able to be rescued, p. 34
- <u>City of Rome, MV: Rams S-51</u> (SS-162) off Block Island, New York, on 25 September 1925 and picks up survivors, pp. 18-19
- Coal-burning Ships: Method of selecting enlisted personnel for during World War I, pp. 1-2; Badders fudges on form to get duty in engine room rather than fireroom, pp. 2-3
- Coast Guard, U.S.: In charge of keeping boats out of the way when <u>S-51</u> (SS-162) towed into New York Harbor in 1926, p. 25; cutter <u>Paulding rams S-4</u> (SS-108) off Massachusetts in 1928, pp. 31-32; role in Squalus (SS-192) rescue in May 193 9, p. 84; Coast Guard vessel attempts to rescue crew from victory ship grounded in Panama Canal during World War II and goes aground herself, pp. 125-126
- Cole, Rear Admiral Cyrus W., DSN (DSNA, 1899): As commandant of the Portsmouth Navy Yard in May 1939 and officer in charge of <u>Squalus</u> (SS-192) rescue, sends chamber down again after obvious survivors saved to ensure there are no others, pp. 87-88; <u>Squalus</u> finally able to be lifted from ocean floor on 21 June 1939, Admiral Cole's birthday, pp. 99- 100
- Commissioned Officers: Badders regrets that his inactive status during World War II prevented him from being commissioned, as many of his friends were, pp. 153-156
- Crew: U.S. Naval Academy crew that won 1920 Olympic gold medal brought back together in 1924 to try again, pp. 11-12; See: Glendon, Richard J.; Glendon, Richard J., Jr.
- Disasters: Free balloon lost at Pensacola in early 1920s, p. 6; F-boat sunk off Honolulu in 1914, pp. 28-29; Japanese ship grounds and turns over with some loss of life in early 1930s, pp. 49- 50, 53-55; American S-type submarine accidentally rammed by pilot ship at Panama Canal in World War II, p. 13 7; vessel loaded with soybeans catches fire and explodes at Panama in the mid-1940s, pp. 143-147; <u>See: S-51</u> (SS-162); <u>S-4</u> (SS-108); <u>Squalus</u> (SS-192)
- Diving: Navy's program in the mid-1920s extremely weak, pp. 17, 21, 28-29, 34; hazard of cold weather diving, pp. 20-21; as part of <u>S-51</u> (SS-162) salvage in 1925-1926, p. 22; push for more and better quality divers in 1926, p. 28; attempts to rescue crew members from <u>S-4</u> (SS-108) in December 1927, p. 31; failure with <u>S-4</u> brings about more money and interest in Navy's diving program, p. 34; pay bonuses for divers, p. 45; lack of master divers on Asiatic Station in 1930s, pp. 44-45; protocol for order of diving, p. 46; hazard of night diving in Far East, pp. 46-47; drills for rescuing submarine crews in early 1930s, pp. 38, 57; depths for diving qualifications, p. 58; helium and oxygen experimented with in late 1930s, pp. 76- 81; developments in the early 1970s, pp. 91-95; dangers of deep depth diving, pp. 95-96; health factors, pp. 96-99; diver tenders, p. 112; Badders sent on odd diving jobs in Caribbean, pp. 152-153; <u>See</u>: Rescue Operations; Sharks; Barracudas; Humboldt Current; Experimental Diving Unit; Navy Diving School; Diving—Training
- Diving—Training: Poor quality of training in Washington, D.C., in mid-1920s, p. 17; difficulty keeping divers qualified on Asiatic Station in early 1930s, pp. 45, 57; in Panama Canal

during World War II, pp. 108-116, 118; See: Navy Diving School

Eagle-class Patrol Boats: Used with lighter-than-air planes at Pensacola in early 1920s, p. 5

- Edison, Charles: Secretary of the Navy Edison reenacts presenting Medal of Honor to Badders and three other <u>Squalus</u> (SS-192) rescuers in January 1940, pp. 103-104
- Ellsberg, Lieutenant Commander Edward, USN (USNA, 1914): In charge of salvage work on <u>S-51</u> (SS-162) in the mid-1920s, pp. 22-23; makes suggestions for improvements after <u>S-51</u> salvage in 1926, p. 26; recommends Badders for promotion to chief in 1926, p. 30
- Engineering Duty: Badders' duties as new recruit in <u>Wisconsin</u> (BB-9) in 1918, p. 3; engineering crew does half of overhaul to USS <u>Falcon</u> (ARS-2) in 1924, pp. 13-14
- England: Poor quality of ships passing through Panama Canal during World War II, p. 121
- Experimental Diving Unit: Divers used as guinea pigs to establish standards, pp. 75-76; divers return from Squalus (SS-192) salvage to do paperwork, pp. 101-102
- <u>Falcon</u>. USS (ARS-2): Poor condition when Badders reported aboard in 1924 during overhaul and turnaround by 1925, pp. 13-15; another overhaul in 1925, p, 16; sent to aid sunken <u>S-51</u> (SS-162) in September 1925, pp. 16-26; cruise to Panama with subs in early 1926, p. 21; part of rescue and salvage effort of <u>S-4</u> (SS-108) in late 1927-early 1928, pp. 30-34; conducts submarine rescue drills in early 193 0s, pp. 3 8-3 9; helium/oxygen mixture for divers tested in cold weather dives, pp. 77, 80-81; aids in <u>Squalus</u> rescue in May 1939, pp. 83-89
- Fireman Rating: Method of choosing enlisted men during World War I, pp. 1-2
- Football: Pensacola Air Station football team among first to be transported to games by air in early 1920s, pp. 4-5; officers and enlisted men on team in early 1920s, p. 7; Badders plays with <u>Reina Mercedes</u> semipro team in mid-1920s, p. 29; Badders plays with submarine division team while in <u>Holland</u> (AS-3) in mid-1930s, pp. 68-70
- Frazer, Chief Torpedoman James W., USN: As one of the Navy's few divers in the 1920s, works on both <u>S-51</u> and <u>S-4</u>, p. 33
- Galapagos Islands: Fortified during World War II, p. 142
- Gehrig, Lou: Brings American baseball players to Manila in the 1930s to play pro teams that included many American military personnel and businessmen, p. 62
- Glendon, Richard J.: Coach of 1920 Naval Academy Olympic gold medal--winning crew team brought out of retirement in 1924 to try again, p. 12
- Glendon, Richard J., Jr.: Anecdote concerning 1920s Naval Academy crew coach, pp. 10-11
- Good, Lieutenant Roscoe F., USN (USNA, 1920): Coaches submarine division basebal1 team in China to championship three years in a row in the 1930s, pp. 59-60, 65
- Great Lakes, Illinois: Boot training during World War II, pp. 1-2; athletics in 1919, p. 4

Hagberg, Lieutenant (j.g.) Oscar E., USN (USNA, 1931): Coaches successful submarine division

football team at San Diego in mid-1930s, p. 69

- Hartley, Lieutenant Henry, USN: Encourages Badders to become involved in salvage duty in mid- 1920s, p. 13; shapes up <u>Falcon</u> (ARS-2) upon reporting as commanding officer in 1924, p. 14; proponent of expanding rescue and salvage capabilities in mid-1920s, pp. 17, 28; makes recommendations for improvements after <u>S-51</u> salvage in 1926, p. 26; sets up diving school in Washington, D.C., in 1928, pp. 35-37
- Holland. USS (AS-3): Equipped to lift ships from her bow, p. 67; baseball team in the mid-1930s, p. 68
- Hollowell, Lieutenant Commander John A., Jr., USN (USNA, 1922): As head of the experimental diving unit at Washington, D.C., in mid-1930s, requests Badders join unit, pp. 70-71
- Humboldt Current: Badders plunges into cold current while conducting experimental dives from <u>Mallard</u> (ASR-4) in late 1930s, pp. 78-79
- Japan: Passenger ship grounds and turns over with some loss of life in early 1930s, pp. 49-50, 53-55; Panama Canal not attacked in World War II because Japanese wanted to use it themselves, pp. 141-142; See: Kaku Maru
- Kaku Maru: Pigeon (AM-374) goes to rescue of this Japanese merchant vessel, on fire in the China Sea in the early 193Os, and discovers later that she was hiding aviation fuel, pp. 48-49, 55-56
- <u>Kansas</u>. USS (BB-21): Badders assigned as engineer for admiral's barge in 1921, p. 7; crew plays non-stop baseball for Norwegians during summer cruise in 1921, p. 89; decommissioned in December 1921, p. 9
- King, Captain Ernest J., USN (USNA, 1901): As commander of the New London submarine base during 1926 S-51 (SS-162) salvage operation, tells Badders to wear heavy buoyant life jacket during dangerous maneuver that hinders his effort, p. 24; Badders flies with King from Annapolis to Boston to aid in rescue effort on S-4 (SS-108) in December 1927, p. 31; advises Badders to get into aviation in the late 1920s and later disapproves his request to do so, pp. 34-35
- Lafayette, USS (AP-53): Salvage of this French liner at New York pier diverts Badders and equipment from Panama Canal, pp. 109-110
- Liberty Ship: Poor quality of construction poses problems during World War II transits of Panama Canal, p. 21
- Lighter-than-air: Aircraft at Pensacola in early 1920s, p. 5
- Mallard. USS (ASR-4): Badders chilled by Humboldt current during experimental dives from this ship in late 1930s, pp. 78-79
- Marine Corps, U.S.: Football team at San Diego in mid-1930s, pp. 69-70; Marines boarded all ships during World War II Panama Canal transits, pp. 127-128

Mariveles Bay: Badders has close call with coral snakes during night dive in early 1930s, pp. 46-

- McCann Chamber: Selected for further experimentation by divers in the 1930s, pp. 40, 43; used in <u>Squalus</u> (SS-192) rescue in May 1939, pp. 84-87
- McNamara, Robert S.: As Secretary of Defense, interested in obtaining commission for Badders in early 1960s, p. 155
- Medal of Honor: Badders and three others receive this award for 1939 <u>Squalus (SS-192)</u> rescue in January 1940, pp. 102-104
- Michels, Chief Torpedoman James W., USN: Sent from Newport Torpedo Station to aid in <u>S-51</u> (SS-162) salvage effort in 1925-1926, p. 18; life endangered during <u>S-4</u> rescue attempt in December 1927, p. 32
- Mihalowski, Torpedoman First Class John, USN: Role in <u>Squalus</u> (SS-192) rescue in May 1939, pp. 85, 103
- Mines: Czechoslovakian ship blown up in Panama Canal during World War II, p. 136; ship transitting Panama Canal fouls propeller on German mine, pp. 138-141
- Momsen, Lieutenant Commander Charles B., USN (USNA, 1920): As head of Navy experimental diving unit in May 1939, oversees Squalus (SS-192) rescue, pp. 82, 87; See: Momsen Lung
- Momsen Lung: Experimented with in the early 1930s and all submariners trained in its use, pp. 40-43
- Morale: Haphazard conditions during overhaul of <u>Falcon</u> (ARS-2) in 1924 improved with new commanding officer, pp. 13-15
- Naval Academy, U.S .: Midshipman cruise in Kansas (BB-21) in 1921, pp. 8-9
- Naval Gun Factory, Washington, D.C.: Navy diving school established in 1928, pp. 35-37
- Navy Diving School: Established at Naval Gun Factory in late 1920s, pp. 35-36; class sizes, p. 36; training, pp. 39-40
- NC-4: Lieutenant Commander Albert C. Read, USN, visits Pensacola in NC-4 in early 1920s, pp. 6-7
- Newport, Rhode Island: Site of Navy's diving program in mid-1920s, p. 17
- New York Navy Yard: Workmen race to bring <u>Falcon</u> (ARS-2) out of overhaul to rescue <u>S-51</u> (SS-162) in September 1925, p. 16; <u>S-51</u> (SS-162) brought to yard after being raised in 1926, p. 25; <u>See</u>: Plunkett, Rear Admiral Charles P., USN
- Nicaragua: See: Somoza, Anastasio; Somoza Debayle, General Anastasio
- Normandie. SS: See: Lafayette. USS (AP-53)
- Norway: USS <u>Kansas</u> (BB-21) crew entertains Norwegians in Christiania (Oslo) with non-stop baseball in summer of 1921, pp. 8-9

- Olympics: 1920 gold medal winning crew from U.S. Naval Academy sets out to duplicate feat in 1924, but is thwarted by Yale, pp. 11-12
- Ortolan, USS (ASR-5): Holland (AS-3) divers made re-qualifying dives from this ship in mid-1930s, p. 68
- Paige, Leroy "Satchel": Badders gets hit of a lifetime off of pitcher Paige when the black baseball star brought an American team to play in Manila, pp. 62-63
- Panama Canal: Underwater welding equipment and techniques employed during World War II, pp. 73-75; warm water diving experiments conducted here in late 1930s, pp. 78-79; Badders leaves active duty to take job as master diver-salvage master in 194 0, pp. 104-106; living situation, pp. 106, 156; backward nature of diving before Badders' arrival, p. 107; Badders initiates plans to keep canal functioning during wartime that includes diving school, pp. 108-116, 118-119, 133-136; assessment of Panamanians, pp. 113-114, 133; dual role of divers, pp. 114- 115; pipelines, p. 116; grounded ships, pp. 117-118, 121-126; ship sizes and numbers passing through canal during World War II, pp. 119-120; post-war diving contingent, pp. 126, 153-154; security during war, pp. 127-131, 141; importance of Lake Gatun, pp. 131-133; mines, pp. 136-141; Japanese didn't attack canal because they wanted it for themselves, pp. 141-142; round-the-clock work on a burning ship full of soybeans, pp. 143-147; Ladder s's World War II setup made permanent after the war, pp. 153-154
- Parachutes: Available but not used at Pensacola in early 1920s, p. 6
- Paulding, USCGC: Rams <u>S-4</u> (SS-108) off Provincetown, Massachusetts, in December 1927, pp. 31-32
- Pensacola: Athletics in early 1920s, pp. 4-5, 7; aircraft at Pensacola in early 1920s discussed, pp. 5-6
- Philippine Islands: Badders plays on pro baseball team in 1930s, pp. 59, 61-64; golf a popular pastime for naval personnel in 1930s, pp. 61, 64
- Piccard, Auguste: French diver's role in development of pressurized diving vessels in 1940s, pp. 94-95
- <u>Pigeon</u>. USS (AM-47): Operating schedule in Asiatic Fleet in early 1930s, pp. 44-45; puts out fire on Japanese merchant ship and learns later that she was hiding aviation fuel, pp. 48-49, 55-56; rescues passengers from a Japanese ship that runs aground in early 1930s, pp. 49-50, 53-55; practices sub rescues, p. 57; anecdote showing ship commanding officer and Badders' desire to get off Asiatic Station, pp. 65-66
- Plunkett, Rear Admiral Charles P., USN (USNA, 1884): As commandant of the Brooklyn Navy Yard in September 1925 orders the <u>Falcon</u> (ARS-2), temporarily laid up for a minor overhaul, to make immediate repairs and go to the aid of the sunken <u>S-51</u> (SS-162), p. 16; selects Lieutenant Commander Ellsberg to head <u>S-51</u> salvage effort, pp. 19-20

Promotion: Procedure for making chief in mid-1920s, p. 30

Read, Lieutenant Commander Albert C., USN (USNA, 1907): Visits Pensacola in NC-4 after his

historic 1919 transatlantic flight, pp. 6-7

- Reina Mercedes, USS (IX-25): Location at the Naval Academy in 1921, p. 10; officers aboard in 1921, pp. 12-13; Badders member of this ship's semipro football team in mid-1920s, pp. 29-30
- Rescue Operations: Divers from Newport sent to sunken S-51 (SS-162) in September 1925 determined that no one was alive, p. 18; officers make suggestions for changes aboard submarines after S-51 (SS-162) salvage, p. 26; attempts to save crew members from S-4 (SS-108) in December 1927 futile, pp. 31-33; drills with submarines in early 1930s, pp. 38, 57; method of escape from a submarine in 1930s, p. 41; victory ship ran aground during World War II in Panama Canal, pp. 121-125; See: McCann Chamber; Momsen Lung

Royal Navy: Status of salvage operation in Hong Kong in early 1930s, p. 51

- <u>S-4</u>. USS (SS-108): Rammed by Coast Guard cutter <u>Paulding</u> in December 1927, pp. 31-32; futile attempt to rescue six crew members, pp. 31-33; salvage job, pp. 33-34; put back to use for diving experiments in early 1930s, p. 40; rescue techniques developed during late 1930s could possibly have saved crew members' lives, pp. 74- 75, 90
- S-51. USS (SS-162): Salvage efforts by USS Falcon (ARS-2) after sinking in September 1925, pp. 16, 26; underwater burning and welding tested during salvage, p. 71
- Salvage Work: Badders encouraged to pursue salvage work in mid-1920s, p. 13; salvage ship sent to rescue of S-51 (SS-162) in September 1925 had no divers and little equipment, pp. 16-17; method of raising submarine, pp. 20-26; recommendations made for pontoon improvements after S-51 (SS-162) salvage, pp. 26-28; F-boat salvaged off Honolulu in 1914 by sweeping wires under it, pp. 28-29; S-4 (SS-108) salvage was repetition of S-51 job, pp. 33-34; See: Diving; Falcon
- San Diego: Football widespread among military and colleges in mid-1930s, pp. 69-70
- Saunders, Commander Harold G., USN (USNA, 1912): As officer in charge of <u>S-4</u> salvage operation in 1928, p. 33
- Sculpin. USS (SS-191): On scene during sister submarine Squalus¹ disaster in May 1939, p. 83
- Sealab: Saturation pressure technique used to allow divers to stay at great depths for long periods of time, p. 93
- Sharks: Though present, not a problem to Navy divers in Far East in early 1930s, pp. 51, 93
- Sibitsky, Boatswain's Mate Second Class Martin C., USN:Role in <u>Squalus</u> (SS-192) rescue in May 1939, p. 84
- Snakes: Badders has brush with poisonous coral snakes during night dive in Mariveles Bay in early 1930s, pp. 46-47
- Somoza, Anastasio: Nicaraguan President rewards Badders for his part in raising his sunken yacht in the mid-1940s, pp. 148-150; Badders' assessment of Somoza, pp. 150-152

- Somoza Debayle, General Anastasio (USMA, 1946): Unfavorable assessment of Nicaraguan President in the late 1960s, pp. 148, 151-152
- Soybeans: Gas produced by these beans in hold of burning ship at Panama in the mid-1940s creates potentially explosive situation, pp. 145-146
- Squalus. USS (SS-192): Use of pontoons in mid-1939 salvage operation, pp. 28, 89; rescue of 33 crew members using McCann chamber, pp. 43, 82-90; divers rush to scene of disaster, pp. 81-83; salvage operation, pp. 99-100; paperwork on operation, pp. 101-102
- Submarine Duty: Reluctance of some submariners to cooperate with rescue drills in early 1930s, pp. 38-39
- Submarine Rescue Vessels: After going for too long with just the <u>Falcon</u> (ARS-2) Navy converts other ships to this mission in late 1920s, p. 37
- Sullivan, Commander William A., USN: As officer in charge of <u>Lafayette</u> (AP-53) salvage, diverts equipment to Panama after 1942 operation, pp. 109-110
- Tibbals, Chief Gunner Clarence L., USN: Experiments with helium and oxygen mixtures for diving in mid-1920s, p. 76
- Uniforms: Slipshod apparel aboard Falcon (ARS-4) in 1924, pp. 14-15
- Victory Ships: Poor quality of construction poses problems during World War II transits of Panama Canal, pp. 121-125
- Welding—Underwater: Underwater burning and welding tried in S-51 (SS-162) salvage in mid-1920s, p. 71; explanation of, pp. 72-73; efficiency of welding in Panama Canal during World War II, pp. 73-74; equipment and technique developments in 1940s, pp. 74-75
- Williams, Ted: <u>Hoi land</u> (AS-3) baseball team plays Williams's high school team in San Diego in the mid-1930s, p. 68
- Wisconsin. USS (BB-9): Badders fudges on forms and is sent to engine room instead of shoveling coal in 1918, pp. 2-3; patrols Atlantic during World War I, pp. 3-4