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UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

JANET LINDELL AND CARLTON LINDELL,
Plaintiffs,

Civil Action No.: 1: 13-cv-12630

v.

METROPOLIT AN LIFE INSURANCE COMP ANY , et al.,
Defendants.

REBUTTAL REPORT OF DR. BARRY CASTLEMAN

General Dynamics/Electric Boat ("GD/EB") had independent knowledge, beyond any provided by the United States Navy, regarding the hazards of asbestos. Separate and apart from Electric Boat, General Dynamics was an owner and controller of Asbestos Corporation Limited, a Canadian asbestos fiber mine, for many years. For more information about Asbestos Corporation Limited and its awareness of asbestos hazards which would have been available to General Dynamics, please see Chapter 9 of my book Asbestos: Medical and Legal Aspects (5th Edition), referenced in my original report, and the documents discussed therein.

Mr. William H. Ray of General Atomics (a division of General Dynamics) was a member of the American Industrial Hygiene Association (AIHA) in 1958. The AIHA published an Industrial Hygiene Guide on Asbestos in its journal in April 1958 in which asbestosis and lung cancers were noted.

Specific to the site at issue in this case, GD/EB was a member of the National Safety Council, an organization that published regularly on the health hazards of asbestos, in its monthly magazine and other publications, from 1952 through 1972. For more information about the National Safety Council's publications on asbestos hazards, please see Chapter 10 of my book Asbestos: Medical and Legal Aspects (5th Edition).

GD/EB was also a member of the Shipbuilder's Council ("Council") from 1969 through 1979. GD/EB was present for the Council's Safety Committee meetings, including those in which asbestos hazards were explicitly discussed. The minutes from a April 2, 1969 meeting reflect, among other things, that the Committee reviewed press clippings discussing the need to lower the threshold limit value ("TLV") for asbestos from 5 million particles per cubic foot (MPPCF) to 2 MPPCF and the concern that asbestos was a significant pollutant in the general atmosphere. Shortly thereafter, on April 14, 1969, all members of the Council, including GD/EB, received a request from the Council for any information regarding studies of asbestos problems. Through the early 1970s, the Council sent representatives to a series of meetings with Dr. Irving Selikoff of Mt. Sinai to address the rise of asbestosis and associated cancers within

shipyards. A complete compilation of my documents pertaining to the Shipbuilder's Council of America is attached in total hereto as **Rebuttal Report Exhibit 1**.

GD/EB hired Dr. Archibald MacDougall as its Supervisor of Health starting in 1950. Two years later he was promoted to Medical Director and continued in that capacity until at least 1979. Dr. MacDougall was deposed on November 19, 1979 where he testified about his knowledge about asbestos hazards from various sources. He admitted to attending a 1958 conference where he claims he first learned that asbestos was a known toxin to humans. However, Dr. MacDougall also acknowledged being a member of the American Medical Association since 1945, and as a result he received the "Journal of the American Medical Association" ("JAMA"). As discussed in my book Asbestos: Medical and Legal Aspects (5th Edition), there were numerous publications in JAMA discussing asbestos related diseases including lung cancer and mesothelioma that were available to Dr. MacDougall during these years. These included "Industrial Management and Occupational Cancer" by Hueper, JAMA (1946), "Asbestosis and Cancer of the Lung" (Editorial), JAMA (1949), and "Asbestos Exposure and Neoplasia" by Selikoff et al., JAMA (April 6, 1964) amongst others. For a more detailed explanation of these articles that were available to Dr. MacDougall and GD/EB please see Chapter 2 of my book.

Dr. MacDougall also testified to receiving the Journal of Occupational Medicine. Throughout the late 1960s and 1970s, the Journal of Occupational Medicine published multiple articles discussing the hazards of asbestos. The journal featured "Mortality Pattern in a Cohort of Asbestos Workers – A study based on employment experience" by Mancuso (1967), "Industrial Hygiene for Insulation Workers" by Balzer (1968), and Measurement of Asbestos Exposure by Lynch (1968). A complete list of these articles is contained in total as **Rebuttal Report Exhibit 2**, hereto.

Dr. MacDougall maintained GD/EB's medical library which included various publications dealing with occupational health including "Diseases of Occupation" by Hunter, "Occupational Diseases" by Johnstone, and "Asbestos and Diseases" by Selikoff, amongst others. He further admits to being aware of the Threshold Limit Values (TLVs); the TLV for asbestos was 5 MPPCF in 1955. For a more detailed explanation of TLVs for asbestos, please see Chapter 4 of my book.

Mr. Robert Secor worked as a chemist at GD/EB starting in 1958 and was later promoted to Chief of Environmental Controls. He was deposed on November 5, 1979 and testified about GD/EB's and his own knowledge about asbestos hazards from various sources. He also maintained a library of publications including "Industrial Hygiene and Toxicology" by Patty amongst others. Mr. Secor said that he first learned about asbestos causing lung cancer and mesothelioma in 1968 when he attended a meeting involving Dr. Selikoff.

Mr. Secor further testified to maintaining a bound log book which contained industrial hygiene asbestos dust measurements taken by GD/EB while insulation was being installed and removed aboard submarines. I have been provided a copy of this industrial hygiene asbestos dust study log book. The log book shows very high levels of exposure to asbestos to insulation workers and bystanders to that work.

Mr. Bradford Heil served as the Manager of International Programs and Business Development, and was employed at Electric Boat starting in 1977. He testified on March 27, 2015, albeit in a different case, as the Person Most Knowledgeable of GD/EB. He admits that GD/EB had industrial hygienists on staff starting in the 1950s.

It is my opinion, based on the above information, that GD/EB had extensive knowledge about the hazards of asbestos at its disposal dating back to the 1950s or earlier. As a result, and given its vast resources, GD/EB was more than capable of taking asbestos dust measurements dating back to the 1950s and implementing safety precautions to reduce or eliminate asbestos exposures to workers at its shipyard. Despite this, GD/EB did not perform any industrial hygiene tests for asbestos dust until the early 1970s even though it was well aware that asbestos containing insulation was used in the manufacture of submarines at its shipyard. In fact, the first known industrial hygiene test for asbestos dust taken at the GD/EB shipyard was performed by the Connecticut State Department of Health in 1965. At that time, the threshold limit value for asbestos was 5 million particles per cubic foot of air, and the test results showed 288 million particles per cubic foot of air (more than 57 times the limit). Of particular note here, GD/EB's internal memoranda indicate that the exhaust for the ventilation system for the insulation department emptied directly into the shipyard's atmosphere.

Since GD/EB had ample information about asbestos hazards available to it dating back to the 1950s or earlier, there is no question that it should have taken precautions to protect workers from asbestos dust as soon as that knowledge was learned. I have attached the file I maintain, regarding GD/EB, in total hereto as **Rebuttal Report Exhibit 3**.

Dr. Barry Castleman