WATERCRAFT PHILATELY
SHIPS ON STAMPS UNIT,
AMERICAN TOPICAL ASSOCIATION

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Vol. 19, No. 6 May - June 1973

DREDGES ON STAMPS

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One type of watercraft not very well represented on stamps is the dredge. This unlovely craft is essential for the operation of the harbors and waterways of the world. Modern shipping would not be possible without it.

Dredges can be divided into two types: those used for mining and those used for waterway maintenance. Both these types have certain components in common. They must have a hull, a ladder or some means of bringing up the material from the bottom, some means of anchoring and moving, and a method of removing material from the bottom (see Figure 1).

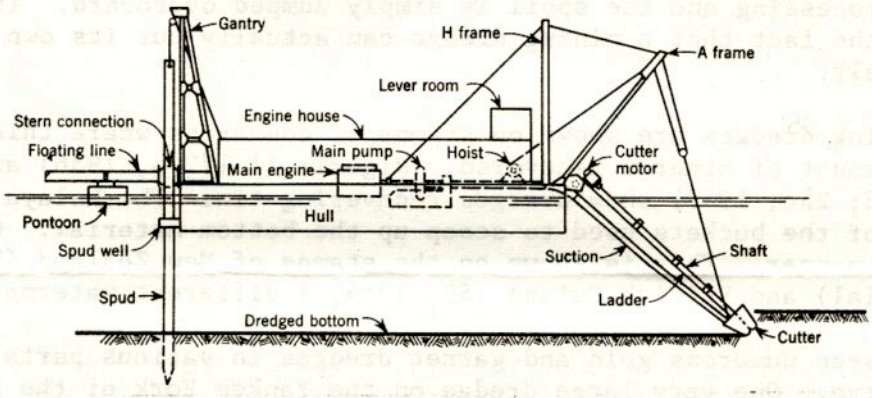

Figure 1. Components of a dredge (From Huston 1967)

The hull of a dredge may be nothing more than a set of pontoons or it may be a full sized ship hull. The method of anchoring and moving the dredge is usually one of two types, spuds or anchor lines. A spud is a large pile-like pin at each of the stern corners. The entire process of moving using spuds is shown in Figure 2. This same moving operation can be done using anchor lines but the spud seems to be prevalent in shallow waters.

The ladder is the support for the mechanism that conveys the dredged material from the bottom to the surface. This ladder is generally fixed so its only movement is vertically. In order to move the point of operation, it is necessary to swing the entire dredge.

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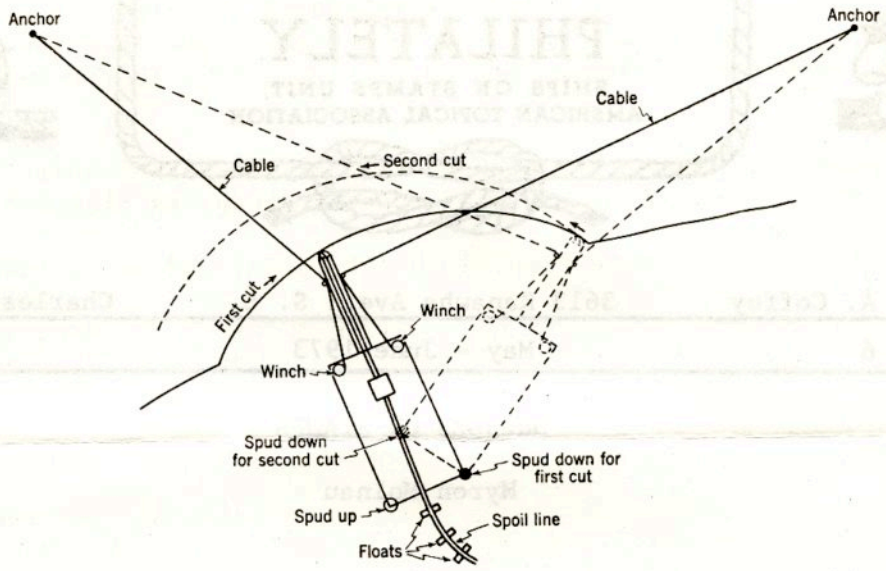

Figure 2. Operation of a dredge using spuds. (from Linsley and Franzini, 1972)

The heart of the dredge is at the bottom of the ladder. Here the bottom material is picked up and conveyed to the surface. This may be done by suction or by large buckets.

The mining dredges generally have the bucket arrangement with the many buckets on an endless chain. The material is scooped up and carried to the washers and separators on the dredge. The gold, tin, diamonds, or other valuable material is shunted aside for further processing and the spoil is simply dumped overboard. This method of mining accounts for the fact that a mining dredge can actually cut its own channel and fill it in behind itself.

The mining dredges are shown on stamps of countries where this method can account for a large amount of mineral recovered. Nigeria (1 1/2 p, 1936) and the Malaya Federation (4¢, 1943; 25¢, 1957) show dredges recovering tin. The Malaya 25¢ gives an excellent picture of the buckets used to scoop up the bottom material. Gold is mined in much the same manner. This is shown on the stamps of New Zealand (9p, 1940; also overprinted Official) and British Guiana ($2, 1954; 2 different watermarks).

I have seen numerous gold and garnet dredges in various parts of Idaho where they are still active. One very large dredge on the Yankee Fork of the Salmon River is being turned into a museum by the Forest Service.

The suction dredge is generally employed at deepening or maintaining waterways and harbors. The material is sucked from the bottom along with a large quantity of water and sent to the spoil area. The first type of suction dredge operates much like vacuum cleaner. This simply sucks up the soft unconsolidated material. A second type of suction dredge is the cutterhead dredge which is used to dig into consolidated materials. This dredge employs a variety of cutters at the entrance to the suction hose. The type of cutter is chosen based on the type of material to be excavated and is usually powered by a hydraulic motor. The suction is provided by large centrifugal pumps.

Once the material is picked up, it must be transported elsewhere for disposal. If a spoil area is close at hand, the material may be pumped through floating pipelines to the spoil area. If no convenient area is near, the material has to be stored

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aboard ship for disposal later. Since it is stored in large hoppers, these dredges are called hopper dredges. One such hopper dredge is the FU CHING shown on Danzig charity stamp (10 + 5 pf, 1938). Another suction dredge is shown on a stamp of Russia (20K, 1951).

There is another dredge shown on a stamp of the Netherlands (6+4¢, 1959). I have not seen this stamp so I cannot say what type of dredge is pictured.

The original dredges were probably built in Holland about 1600. These were the first known dredges resembling the present day machines. Very nice models are shown by both Williams and Huston. These were called mudmills and were first operated by men. About 1620 is the first recorded instance of horses being used for power.

REFERENCES

Herbick, John B. 1971. Dredging methods for deep ocean mineral recovery. Proceedings of the American Society of Civil Engineers 97 (WW2); 385-398.

Huston, John. 1967. Dredging fundamentals. Proceedings of the American Society of Civil Engineers 93 (WW3); 45-69.

Linsley, Ray K. and Joseph B. Franzini. 1972. Water resources engineering (2nd edition). McGraw Hill. New York.

William, Guy R. 1971. The world of model ships and boats. G. P. Putnam's Sons. New York.