

manufactures southward, fitting into this traffic matter as no other means whatsoever.

And now that we are in a war, with every port closed on all our coasts, the sole means of obtaining volume in transportation in replacement of tank ships on the Gulf-Atlantic run, is just this very canal with but  $3\frac{1}{2}$  percent additional required, to connect the dead end at St. Marks with the St. Johns River and thus the North Atlantic coast.

Col. Ernest Thompson, chairman, Texas Railroad Commission, upon receiving a copy of my analysis delivered before Intracoastal Canal Association, had some 100 copies typed in his office for sending to interested parties, one of which was sent to the President. I am now advised that the President sent his copy to Mr. Ickes, and doubtless it eventually reached your office.

Comment, I am advised, from your office is that my analysis contains some inaccuracies. Perhaps it does, for I have made no actual surveys or core drillings along the route, but worked from cross sections sent from the Jacksonville office of the Corps of Engineers. I shall outline what I had in mind with reference to expedition.

A 9-foot trans-Florida canal link on a bottom width of 125 feet. A lock canal, to get over a low divide with the least effort. Timber locks with earthen walls backing the same, but with timber so arranged as to compose forms for pouring concrete after the canal and locks are in operation.

As to construction. The dry sections with drag lines on each bank, working toward the center, one following another. Contracts in short sections to allow as many to work as possible. The wet sections to be excavated with such machines, one on each bank working toward the center line, but not to the center, as are employed on drainage projects on the Gulf Coastal Plain of Texas for lowering water tables—some are deeper than 9 feet. And cutter dredges along the center line, following excavators. Twelve entries for the wet sections.

On the other hand, General Reybold includes a 12-foot depth on a bottom of 150 feet; a sea level canal, which comprises about 40 percent greater excavation than for a 9-by-125-foot canal. Some of the excavation will classify as hard—a soapstone most of which can be removed in the wet sections with cutter dredges. (I designed certain parts of the dredges of this type that were employed in draining Lake Okechobee through the present canal, some thirty-odd-years ago.) A 9-foot canal gets down into rock somewhat less than a 12-foot, of course. But a small portion of the route shown by cross sections shows this soapstone.

That, I believe, explains the matter of time, and the greater time required in General Reybold's estimate. In any case, the time begins when construction starts, of course. (From the way legislation proceeds, more time will be required for that than for the Florida Canal link.)

As to the capacity of barges, the loadings which I included were on steel barges designed especially for inland-waterway use—low freeboard, light construction. The Maritime Commission designs are far heavier, but I have used the lighter without visible distress.

As a time for a round trip, this is based upon clocking the speed of tows with loads and tows empty. I feel sure this is correct, for I have operated *Patsy Lamb* along marked miles of these canals at various screw speeds, and using this for gaging the speed of tows the comparisons are quite accurate. (The Japs have some 20-knot tankers, clocked as they go outside at Port Aransas.)

The remainder of your testimony agrees on but one point, namely, that high-flash-point oils can be carried in wood while low-flash must be in steel.

Your many objections to canals and barges do not appear as your own, Major; for instance, you say that seasoned wood is not available, but you have lived in or near the piney woods and know that dry kilns season wood in a few days. I had intended to analyze each of your statements for inclusion in the record of hearing, but since this would appear equally as contentious I shall say only that the objections to canals and barges is just trivial to any towboat captain or deck-hand.

Going over to the big-inch pipe-line matter, we of the several emergency transportation committees in Texas have not opposed or intended to oppose any means whatever of moving oil to the east coast where needed for prosecution of our war effort, and we have not believed that anyone else would oppose any means which would expedite the war effort.

We could say much about this pipe line, but before doing so, if we do, I wish to say it to you first, but in no spirit other than friendship, for you and I have been friends too long for any manner of event to interrupt.