LEGEND: **Blue = information provided.** **Red = table values, etc.**
Black = calculated values. **Green = ANSWER**

Ocean Track Plotting

Voyage Planning (Composite Sailing) - Chart No. WOXZC 5270

USCG 0655-NP-5 **STEPS**

On a North Pacific voyage, you wish to sail the shortest distance from LAT 46° 05' N, LONG 124° 00' W to LAT 44° 00' N, LONG 150° 00' E. You do not want to exceed 50° N latitude due to anticipated fog conditions. Which voyage plot meets these requirements? (Use gnomonic tracking chart WOXZC 5270)

SOLUTION:

Given: **Plot your great circle track and see which statement is more accurate.**

Gnomonic Chart

The primary advantage of gnomonic charts in voyage planning is that the great circle route between any two points appears as a straight line. The location of the point of tangency determines the type of gnomonic chart as well as its appropriate use.

- Equatorial gnomonic charts are tangent at some point along the equator.
- Polar gnomonic charts are tangent at either the North or South Pole.
- Oblique gnomonic charts are tangent at some position between the equator and the poles.

The disadvantage of a gnomonic chart is that direction and distance can not be easily determined directly from the chart.

The desired track is laid down on the gnomonic chart and then the latitude and longitude of positions along the route at specific intervals (unusually 5° of longitude) are noted and then transferred to a Mercator chart. The navigator can now determine the courses and distances along the great circle route.

On a gnomonic chart the meridians of longitude and the Equator are great circles, they are always shown as straight lines while the parallels of latitude are depicted as concentric circles.

On a Mercator chart projection great circles curve toward the elevated pole.

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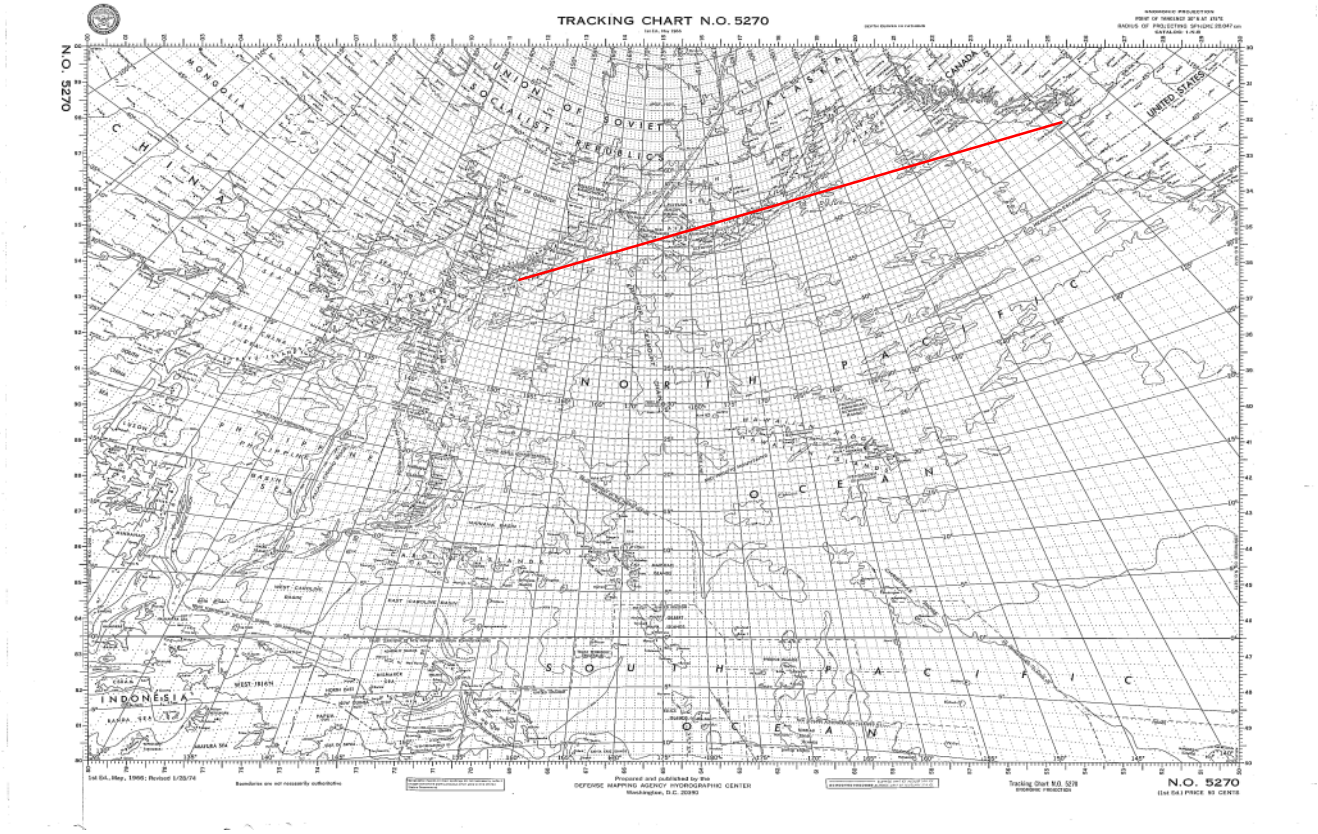


Select the closest answer.

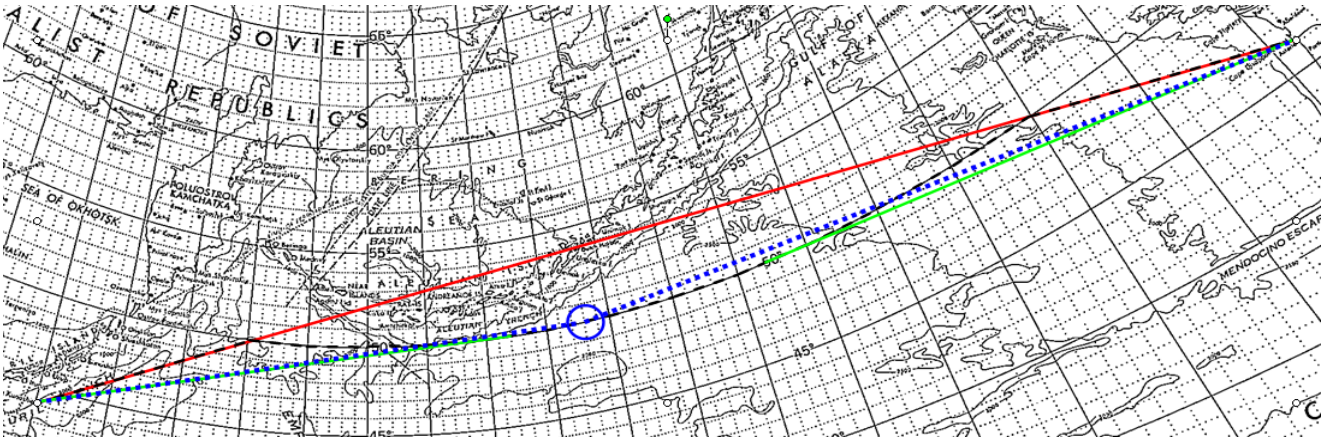
A) A great circle between departure and arrival with Mercator legs north of the Aleutians

B) A great circle between departure and arrival with parallel sailing where the track intersects the 50° N parallel

C) A great circle to 50° N, 153° W, parallel sailing to 50° N, 173° W, then a great circle to arrival ← **ANSWER**

D) A great circle from departure to the mid-longitude at 50° N, then another great circle to arrival

LEGEND: **Blue = information provided.** **Red = table values, etc.**
Black = calculated values. **Green = ANSWER**



A) NO - to go NORTH of the Aleutians will exceed the 50º N restriction. See RED line.
B) NO - this would NOT be the shortest distance but would comply with the 50º N restriction.
C) YES - this will be the shortest distance to travel and comply with the restrictions.
D) NO - to do this would exceed the 50º N restriction.

