### Area Forecast Discussion: North Atlantic and Western Europe Date: Thursday 24 January 2019 Forecaster: Bosart

### **1. Big Picture Perspective:**

Discontinuous ridge retrogression will continue over the middle and higher latitude North Atlantic Ocean in response to persistent and episodic troughing over central and eastern North America. This ridging over the North Atlantic Ocean will "trap" a cutoff cyclone over the subtropical central Atlantic near 40 W and result in the formation a weak Rex block by 27 Jan. Mobile short-wave troughs moving over the Rex block ridge will flatten this ridge before dropping southeastward into a longwave trough position over the western Europe. This pattern is expected to persist through day 10 with only a slow eastward movement of the principle longwave troughs and ridges. The associated storm track will follow the periphery of the Rex block from near Newfoundland to well south of Greenland and Iceland, and from there east-southeastward and southeastward across the UK and western Europe with a gradual shift southward across southwestern Europe and extreme northwestern Africa.

# 2. Extended Range: Days 7–10

The anticipated pattern favors below to well below normal 850-hPa temperatures across much of the extreme eastern North Atlantic and western Europe. This below normal 850-hPa temperature pattern should spread slowly eastward toward central Europe and equatorward across northwestern Africa. A greater than climatological chance exists of a strong cyclone forming somewhere between the Iberian peninsular and northwestern Africa on the eastern side of an anomalously deep upper-level trough. Any cyclone that forms in this area would be forced move north-northeastward across the western Mediterranean Sea toward southern Europe beyond day 10 and would have the potential to be a high-impact weather event with rare snow and cold.

# 3. Medium Range: Days 4-6

Progressive disturbances crawling over the ridge that defines the Rex block will bring anomalously wet conditions to parts of the UK, France, the Iberian Peninsular, and parts of Morocco and northern Algeria during this period. Surface temperatures will likely be below normal based on negative (-1 to -2 sigma) standardized temperature anomalies at 850 hPa. Iceland will be under the influence of a persistent anomalously cold and moist northeasterly flow regime with precipitation favored in enhanced upslope regions.

# 4. Short Range: Days 0-3

Rex block formation over the central Atlantic will result in upper-level ridge amplification toward southern Greenland by day 3. In response to this ridge amplification, an upper-level trough initially located near 30 N and 40 W will fracture. The southern part of the fracture trough will complete the formation of the southern part of the anticipated Rex block. The northern part of the fractured trough will lift east-northeastward and then deepen southeastward across the UK and northern France where it will bring widespread rain and wind. Positive surface temperature anomalies initially will give way to near-normal surface temperature anomalies despite a deep trough aloft because of an onshore flow of mild Atlantic air. Iceland will be under the influence of cool and moist northeasterly flow regime ahead of the advancing upper-level ridge.