Ukraine has launched a "large-scale" drone attack against Russian military bombers in Siberia, striking more than 40 warplanes thousands of miles from its own territory, a security official has said, after it smuggled the drones to the perimeter of the airfields hidden in the roofs of wooden sheds.

On the eve of peace talks, the drone attack on four separate airfields was part of a sharp ramping up of the three-year war, with Russia launching waves of drones at Ukraine, while Moscow said sabotage was to blame for two train derailments that left seven people dead.

Video from several military airfields across Russia showed destroyed aircraft and planes engulfed in flames, though the full extent of the damage remained unclear.

Among the more than 40 aircraft reportedly hit were Tu-95 and Tu-22 strategic bombers, which Russia uses to fire long-range missiles at Ukrainian cities.

Ukraine's SBU domestic intelligence agency said it had hit Russian military planes worth a combined \$7bn (£5.2bn) in the wave of drone strikes.

If the extent of the damage is confirmed, the attack would mark Ukraine's most damaging drone strike of the war to date, amid an escalation in cross-border incursions before a new round of direct negotiations in Istanbul on Monday.

A Ukrainian official provided video footage to media reportedly showing the strikes, in which Reuters said several large aircraft that appeared to be Tu-95 bombers were on fire. The Tu-95 was originally developed to carry nuclear bombs and now launches cruise missiles.

Several Russian and Ukrainian media outlets reported that Ukraine carried out the operation by launching drones from lorries parked near military airfields deep inside Russia.

Ukrainian officials told the media that the operation – codename "Spiderweb" – had been in preparation for more than 18 months. The drones were first smuggled into Russia and later concealed under the roofs of small wooden sheds which were loaded on to trucks and driven to the perimeter of the airbases. The roof panels of the sheds were lifted off by a remotely activated mechanism, allowing the drones to fly out and begin their attack, the official said.

Seven grey quadrilateral shed roofs sitting in a warehouse. A picture purporting to show the sheds the drones were hidden in. Photograph: Ukraine's security service

Media reports said Ukraine's president, Volodymyr Zelenskyy, had personally overseen the sophisticated operation.

On Sunday evening he thanked everyone involved, adding: "We had been preparing the operation for more than a year and a half. Planning, organisation, all the details were perfectly prepared. I can say for sure that this is a completely unique operation."

He said that the office of Ukraine's operation in Russia had been located "right next to the FSB office in one of (Russia's) regions".

"In total, 117 drones were used in the operation. And a corresponding number of drone operators were working," he said. "Thirty-four per cent of the strategic cruise missile carriers at the airfields were hit. Our people were operating in different Russian regions – in three time zones. And our people were withdrawn from the territory of Russia on the eve of the operation, and now they are safe – those who helped us."