

SINGLE EVENT INVESTIGATION

Airstrikes on residential areas in Lay Kay Kaw

REPORT BY MYANMAR WITNESS, 26 October 2022

Key Event Details:

- **Location of Incident:** Lay Kay Kaw (လေးကျွဲကော်) in Kayin State (ကရင်ပြည်နယ်)
- **Date/Time of Incident:** 10 April 2022
- **Alleged Perpetrator(s) and/or Involvement:**
 - Myanmar Air Force (MAF)
- **Conclusions:**
 - Myanmar Witness believes that an attack took place on a residential area in Lay Kay Kaw (လေးကျွဲကော်) on 10 April 2022. It is highly likely that the attack was perpetrated by a military aircraft.
 - Myanmar Witness was able to cross reference multiple pieces of footage, which were collected and analysed by investigators, to verify the approximate time and location of an alleged airstrike in Lay Kay Kaw (လေးကျွဲကော်).
 - Myanmar Witness believes that it is highly likely that any airstrikes in the area were undertaken by the military, as only the military has the resources (including the aircraft) to cause the destruction pictured. However, no line of direct attribution can be drawn with a specific part of the military.
 - In one piece of footage three damaged civilian homes are visible, however it is unclear if this is related to the airstrikes or as a result of previous clashes.
 - Myanmar Witness is not aware of any civilian casualties from this attack. Many civilians had already fled the area before the airstrikes took place.
 - The risk of future airstrikes makes the area unsafe to return to and the destruction of civilian infrastructure may impact livelihoods.

Executive Summary

Myanmar Witness has been monitoring the conflict in and around Lay Kay Kaw (လေးကျွဲကျွဲ), Kayin State (ကရင်ပြည်နယ်) since December 2021. Many of the events which took place during December 2021 were covered in the published report [Residents Forced to Flee Symbolic Peace Town](#). Since January, there have been intermittent conflicts in this area. This report investigates alleged airstrikes in a residential area of Lay Kay Kaw (လေးကျွဲကျွဲ), close to civilian homes. Many people had already fled the area before the strike took place, and Myanmar Witness is not aware of any civilian casualties.

In April 2022, Myanmar Witness identified user-generated content in the form of six pieces of video footage that captured an airstrike which allegedly took place on 10 April 2022. This footage captures several different angles of the attack. An aircraft, ordnance falling, explosions and smoke are visible in the footage.

The footage has been cross-referenced by Myanmar Witness in order to assess its date and location. Through this, Myanmar Witness has established that the videos were taken in the same area, and it has been possible to verify that an attack took place on 10 April 2022.

An analysis of the aircraft seen within the footage reveals that a YAK-130 flew over the area. As a result, it could be possible to attribute the airstrike to the military, as Myanmar Witness does not believe that local anti-military defence forces have access to YAK-130's, while a [previous investigation](#) has revealed that the Myanmar Air Force (MAF) has multiple YAK-130's in its inventory.

Myanmar Witness also identified damage to civilian homes; however it is unclear at this time if this is related to the airstrikes or whether it was the result of previous clashes. An area which was once designated a 'town of peace' is now unsafe for civilians. The threat of airstrikes, ongoing clashes, and destroyed civilian infrastructure mean that many of the families which have fled the area will be unlikely to return in the near future.

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Background and Context

Myanmar Witness has been monitoring the conflict in and around Lay Kay Kaw (လေးကျွဲကော်), Kayin State (ကရင်ပြည်နယ်) since December 2021. Many of the events which took place during December 2021 were covered in the published report [Residents Forced to Flee Symbolic Peace Town](#). Since January, the conflict has continued in this area, forcing more people to flee the town which once sought to provide refuge for people escaping conflict in the region. This report is the next report in the series which looks into events in this region.

In this report, Myanmar Witness investigates airstrikes in April 2022, and the impact of these on IDPs. A forthcoming report by Myanmar Witness based in the Myawaddy Township in June 2022 will also cover these themes.

Since December 2021, intermittent fighting between the Myanmar military and the KNU has been reported by media outlets, such as [BBC Burmese](#). Heavy fighting was reported to have occurred between 22-24 March 2022 around the towns of Lay Kay Kaw (လေးကျွဲကော်) and Kawkayeik (ကျွဲကရိတ်). Multiple news channels reported the presence of the Myanmar military in Lay Kay Kaw around the time of the airstrikes in April 2022. For example, [and Column](#) - a KNLA/KNU and PDF affiliated Facebook page - uploaded drone footage that purports to show Myanmar military personnel entering Lay Kay Kaw (လေးကျွဲကော်) on the evening of 24 March 2022 (Figure 1). At least 45 individuals can be seen walking along a road in Lay Kay Kaw (လေးကျွဲကော်), which Myanmar Witness geolocated to 16.609374, 98.532961 (Figure 2). However, Myanmar Witness was unable to confirm the date the footage was taken, and there is not enough visual evidence to confirm that these individuals are, in fact, members of the Myanmar military.



Figure 1: A large group of alleged Myanmar military personnel walk through Lay Kay Kaw (လေးကျွဲကော်). Source:

[Cobra Column](#).



Figure 2: Geolocation of approximately 45 visible individuals walking through Lay Kay Kaw (လေးကျောင်း) at 16.609374, 98.532961. Source: [Cobra Column](#).

On 10 April 2022, clashes between the Myanmar military and local pro-democracy forces (PDF) in Lay Kay Kaw (လေးကျောင်း) were reported by the pro-democracy news source Burma VJ. Around 20 soldiers - both Myanmar military soldiers and local pro-democracy forces (PDF) - were reportedly killed. On the same day, airstrikes allegedly hit a residential area in Lay Kay Kaw. This investigation analyses footage which purports to show these airstrikes.

Methodology

Myanmar Witness follows a methodology of digital preservation and rigorous, replicable analysis. Digital evidence is collected and archived in a secure database and preserved with hashing to confirm the authenticity and prevent tampering.



Myanmar Witness applies a four-tier classification system to describe the extent to which footage relating to a specific incident has been independently verified by Myanmar Witness.

Fully verified: Footage independently geolocated and chronolocated by Myanmar Witness to the reported time and location of the incident.

Verified: Footage geolocated to the relevant location, sources concur on the time and date of the incident

Partially verified: Some footage geolocated to the relevant location, sources concur on the time and date of these incidents. Some footage is not possible to geolocate or chronolocate at the present time.

Unverified: Not possible to geolocate or chronolocate footage at the present time.

Geolocation is conducted using a varied array of open source online tools such as Google Earth to match satellite imagery with visual features identified in the footage or images. A high burden of proof is required to match imagery and geolocations are required to be cross-checked and peer-reviewed before they are credited as verified and included in Myanmar Witness reporting. In addition to the open-source reporting, Myanmar Witness was sent footage of the incident by sources on the ground, which it has attempted to verify through this report, using the timestamps of the images provided.

If dealing with unverified information, such as witness testimony or the inclusion of outside reporting, Myanmar Witness has made known that these inclusions are claims and have not been independently verified by Myanmar Witness, but their inclusion may still be relevant to include as context around the investigation. Following ethical standards, Myanmar Witness has obscured identifying information about individuals involved, censored private information and images where appropriate, removed links to private individuals and archived said information securely. Where appropriate, Myanmar Witness has also censored or removed graphic imagery from our reporting.

The information obtained by Myanmar Witness comes from an area of ongoing conflict so it is assumed that there is a selection bias, due to several factors including fear of repercussions for uploading, unavailability of information from official sources and availability, or lack thereof, the internet - which has also restricted the amount of media available to be verified by Myanmar Witness. Myanmar Witness strives to eliminate as much of this bias as possible by using both focussed and broad search terms in multiple languages across open sources as well as identifying media from multiple sources, such as social media and both pro and anti-regime news media to reduce the effects of this bias and ensure as much information from a range of sources is collected.

In this case, the user-generated content (UGC) identified cannot give an accurate chronolocation to the images of the injured child receiving medical care or the images of damaged roofing provided to Myanmar Witness. These images provide timestamps which allege the roofing photos were taken around half an hour after the images of the injured child but this is not a reliable way of assessing the time in which the images were taken. Hence, Myanmar Witness has been unable to confirm the times associated with the event and has reported these times as claims, not independently verified by Myanmar Witness.

Limitations

The information obtained by Myanmar Witness comes from an area of ongoing conflict so it is assumed that there is a selection bias, due to several factors including fear of repercussions for uploading, unavailability of information from official sources and availability, or lack thereof, the internet - which has also restricted the amount of media available to be verified by Myanmar Witness. Myanmar Witness strives to eliminate as much of this bias as possible by using both focussed and broad search terms in multiple languages across open sources as well as identifying media from multiple sources, such as social media and both pro and anti-regime news media to reduce the effects of this bias and ensure as much information from a range of sources is collected.

While there were allegations of the military's involvement in the airstrikes investigated, none of the media collected contained footage of an identifiable aircraft striking Lay Kay Kaw (လေးကျော့ကျော်) which could be attributed to the military. Due to this, no direct lines of attribution can be drawn. Witness statements which had been reported in the news or on social media provided information on airstrikes; however, due to an inability to independently verify their claims, this information is presented as allegations rather than verifiable fact.

Location of the Events



Figure 3: Map of Myanmar created using Open Street Map, with Kayin State (ကရင်ပြည်နယ်) highlighted in grey, Myawaddy Township (မြို့တော်) highlighted in a darker grey and a red marker indicating the location of Lay Kay Kaw (လေးကျောင်းကော်).



Figure 4: The locations in Lay Kay Kaw (လေးကျောင်းကော်) where the footage analysed in this report was filmed.

Airstrikes in Lay Kay Kaw (လေးကျွဲကော်)

Myanmar Witness has analysed five pieces of footage allegedly taken on 10 April 2022 which show either an aircraft flying within the vicinity of Lay Kay Kaw (လေးကျွဲကော်) - identified by Myanmar Witness as a Yak-130 - ordnance falling, and the aftermath of airstrikes demonstrated through smoke. It is possible to hear explosions and what is assumed to be the whistling sound associated with an aerial attack. These videos and reports by media outlets, coincide with reports by a [Telegram aircraft tracking channel](#) which states that at 1735 on 10 April 2022, a fighter jet was spotted flying over Myawaddy (မြဝတီ), close to Dawna Mountain Range (ဒေါ်နီတောင်တန်း) near Kawkayeik (ကျွဲကရိတ်). The same channel also [claimed](#) that, at 1750 local time, an aircraft was present over Lay Kay Kaw (လေးကျွဲကော်). Although Myanmar Witness has been unable to verify these claims, they build upon the body of information which suggests that the Myanmar Air Force and military were active in the area on the 10 April 2022.

Although many residents had already fled the area following conflict in December, the targeting of residential areas places the remaining civilians at risk. Additionally, the destruction of civilian infrastructure greatly impacts the ability of families to return to the town when conflict subsides.

Around this date, there have been claims made online by [Cobra Column](#) and anti-military media that civilian infrastructure had been destroyed as a result of airstrikes. [Karen Information Center](#) uploaded claims that a school, originally also set up by the Nippon Foundation, had been damaged in airstrikes on 10 April 2022.

Geolocating video footage

Footage 1 (verified)

Footage uploaded by [Cobra Column](#) on 10 April 2022 shows a jet making three separate passes above the location where the footage is being filmed. After each pass by a jet, the footage captures multiple pieces of ordnance hitting the ground. Myanmar Witness has geolocated the footage to determine that the ordnance hits a civilian residential area in Lay Kay Kaw (လေးကျွဲကော်) [16.593139, 98.515594] (Figure 5 and 6).



Figure 5: Video uploaded by Cobra Column of explosions in Lay Kay Kaw (လေးကျောင်း). ([Source](#)).



Figure 6: Geolocation of a video uploaded by Cobra Column of explosions at 16.593139, 98.515594.

The video captures the sound of explosions. The second explosion is larger than the first and a flash is visible in the footage (Figure 7) (seen at 0.18 seconds). A flash usually occurs when the explosive charge is big enough to generate heat. Two to three seconds after the flash, two sounds - a boom and another sound - can be heard (at 0.18 seconds and 0.21 seconds).



Figure 7: Video frames taken from Footage Number 1 of flashes at 0.18s and 1.05s respectively.

At 0.10 seconds in the video footage, the high pitched sound of shots can be heard. These are located far from a camera. It is unlikely that these originated from the aircraft. Instead, this could be the sound of anti-aircraft fire from the ground or ground fighting in the area.

At around 0.13s more sounds can be heard. Through audio analysis and comparison by Myanmar Witness, these sounds do not appear to match the sound of a Yak-130 cannon firing 23mm munitions which Myanmar Witness believes to be the aircraft used. Other [footage](#) uploaded by Cobra Column, shows that the rate of fire for a Yak-130 is much faster than what can be heard in this footage. The sounds are more likely to be caused by anti-aircraft gun fire on the ground. Myanmar Witness believes that these sounds at 0.13s are those of a medium-rate heavy calibre weapon firing in succession. Cross-referenced with known rate of fire statistics for the Yak-130, it is believed this is not gunfire from the plane.

0.45 seconds into the footage an aircraft can be heard approaching the same residential area and then a Yak-130 is visible in the video frame. This is followed by the sound of the aircraft firing as it passes over the same residential area. The rate of fire captured in the video's audio is similar to that of a 23mm cannon. Additionally, black smoke is visible trailing behind the aircraft (Figure 8), indicating the use of the gun pod. Myanmar Witness has previously investigated and verified the presence of the Yak-130 in the Myanmar Air Force's arms inventory and its use within populated civilian areas. This increases the likelihood that the MAF was behind the aerial attacks in Lay Kay Kaw, as anti-SAC forces do not have Yak-130s at their disposal. For more information, see Myanmar Witness' report: [ARMS INVESTIGATION Russian YAK-130 aircraft in Myanmar](#).



Figure 8: Image of the aircraft, with small areas of black smoke following the aircraft - indicating the use of the gun pod - as compared to an image of a Yak-130.

At 1.05 seconds, a sound like a whistle can be heard and then the sound of the explosion hits the microphone. This could be the sound of a bomb ‘whistling’ as it descends. As there were no other aircraft visible within the footage, Myanmar Witness believes that it is likely that the ordnance which caused the whistling noise and explosion came from the Yak-130 aircraft captured in this footage. Additionally, it is possible that the ordnance was incendiary in nature due to images of smoke visible after the ordnance was dropped - as well as other footage demonstrating smoke.

The following day [Cobra Column](#) shared a high-resolution image which Myanmar Witness has identified as a Yak-130. The image is alleged to depict the aircraft participating in a military operation in the early hours of 11 April 2022 - however neither the date nor location could be verified from the image (Figure 9). This could indicate repeated use of the same aircraft in this area to attack the previously civilian populations.



Figure 9: image taken by Cobra Column, alleged to document a Yak-130 participating in a military operation on 11 April, 2022. ([Source](#)).

Footage 2 (verified)

Anti-military news source, [Delta News Agency](#), also reported on clashes which took place on the 10 April 2022. According to their reporting many of the Light Infantry Battalion (LIB) 207, including the battalion commander Captain Tin Lin Naing, were killed in Lay Kay Kaw (လေးကျောင်း). The post states that when the area was cleared, the bodies of 12 soldiers were found. However, this cannot be independently verified by Myanmar Witness as no images of the bodies have been identified. It is also alleged that ammunition and nine weapons were taken from the Myanmar military.

Similar to Cobra Column's report, the post claims that airstrikes began at around 1000. These airstrikes allegedly destroyed approximately 30 homes, causing several of them to ignite into flames. In the video footage smoke plumes can be seen coming from the civilian residential area, close to where Myanmar Witness has geolocated Footage Number 1.

Myanmar Witness geolocated footage uploaded by [Delta News Agency](#) to around 16.595156, 98.525058. This is the opposite end of the residential area to Footage Number 1; however, the camera was pointing towards the same area as Footage Number 1 (Figure 10).



Figure 10: Footage of smoke taken from around 16.595156, 98.525058 in a residential area of Lay Kay Kaw (လေးကျောင်း) (Source: [Cobra Column](#)).

Footage 3 (verified)

On 10 April, an anti-military social media account uploaded more footage which Myanmar Witness identified and geolocated to Lay Kay Kaw [16.593190, 98.525429]. The footage shows smoke, and the sounds of shots and jet engines can be heard. The footage provides a different angle to the previous two videos and the camera points in the direction of the area

where Myanmar Witness geolocated footage of a potential airstrike, which points in the direction of where Footage Number 1 was filmed (Figure 11).



Figure 11: Geolocation of footage demonstrating smoking area in Lay Kay Kaw (လေးကျောင်း) at around 16.593190, 98.525429.

Footage 4 (unverified)

In additional footage uploaded by [Cobra Column](#), it appears that there could have been another, separate aerial or artillery attack around this date. The footage appears to show multiple ordinances hitting the ground, each causing a loud explosion on impact, and smoke

Although the post accompanying the footage claims this was an air attack, and that these attacks were chemical-based, Myanmar Witness has been unable to verify this due to a lack of visual evidence. Despite this, the frequency and size of the blasts appear to be consistent with unguided rockets which are used by the Yak-130, as [previously identified](#) by Myanmar Witness and captured in [other footage](#) of rockets firing from a Yak-130 in Myanmar.

The audio begins with what sounds like anti-aircraft fire and the sound of an aircraft approaching. At around 0.05 seconds an individual says "just one.. it's coming, coming" which could suggest that an aircraft had been spotted. At 0.09 seconds, five high-pitched explosions can be heard in quick succession. This is followed by four flashes and black smoke. Myanmar Witness has been unable to geolocate this footage to Lay Kay Kaw (လေးကျောင်း) specifically, though the mountain view appears to match around this residential area (Figure 12) and the distinctive blue panelled homes are present.



Figure 12: Google Images mountain view as compared to a panorama of scenes from Footage Number 4.

It is possible that this footage demonstrates an aerial attack, however it could also show artillery attack. Additionally, the audio which accompanies the footage sounds similar to artillery fire. It is possible that artillery fire came from the Byu Har Kone military base, which is located in an elevated location close to Lay Kay Kaw (လေးကျော့ကော်) [16.581145, 98.539210].

Images shared with the Myanmar Witness team through a private submission in December 2021 shows artillery firing positions, mortar positions in the ground, and weaponry stationed there. More information about the position has been included in a previous published report: [Residents Forced to Flee Symbolic Peace Town](#). It is possible that this base was used to carry out an artillery attack.

Footage 5 (partially verified)

[Cobra Column](#) uploaded additional footage which shows fragments of aerial-dropped munitions (Figure 13), which Myanmar Witness to Lay Kay Kaw (လေးကျော့ကော်) [16.593781, 98.522358] (Figure 14 and 15). This location matches the general location where smoke can be seen in the previous videos (Footage 1-3). This footage lends support to the claim that an aerial attack occurred in Lay Kay Kaw at this time.



Figure 13: Fragments from aerial-dropped munitions located at 16.593781, 98.522358. (Source: [Facebook](#)).



Figure 14: Panorama of the general area used by Myanmar Witness to identify the specific set of homes this video was filmed around.



Figure 15: Footage Number 5 was uploaded on 11 April 2022 and geolocated by Myanmar Witness to 16.593781, 98.522358.

The footage also demonstrates destruction to some of the homes in the area where the munitions were found (Figure 16). However, this does not conclusively link airstrikes to the destruction - as Lay Kay Kaw has been an area of clashes since at least December 2021 and this destruction could have been the result of previous fighting.



Figure 16: Destruction to civilian homes that can be seen in Footage Number 5.

Footage 6 (unverified)

Further claims, however unsubstantiated and unverifiable, lend support to the claim that an airstrike took place. Footage uploaded on [Facebook](#) on 10 April 2022 by an anti-military page shows a Yak-130 aircraft flying over what is claimed to be the residential area of Lay Kay Kaw (လေးကျောင်း) (Figure 18). However, Myanmar Witness was unable to verify if it was taken in the alleged area, nor the date on which it was taken.



Figure 18: Image of a Yak-130 claimed to be in Lay Kay Kaw (Source: [Facebook](#)).

Analysing the Event

Through cross referencing the geolocated footage collected by Myanmar Witness and the FIRMS data on 10 April 2022, it appears highly likely that an airstrike occurred within a civilian residential area in Lay Kay Kaw (လေးကျောင်း). Figure 19 maps out the different locations discussed within this investigation.



Figure 19: Cross referencing three pieces of footage which confirm that artillery was fired and landed in Lay Kay Kaw (လေးကျောင်း), likely on 10 April 2022.

The event itself represents a disregard for Lay Kay Kaw (လေးကျောင်း) as a town of peace designed to house refugees and other populations in Kayah. Despite the area likely not being home to many civilians since clashes began in December 2021, this disregard for the area possibly leading to the destruction of homes could create hardship for those hoping to return to the area.

Time of the Event

Cobra Column, the organisation responsible for sharing footage number 1, 4 and 5, claimed that the Military attacked the town with artillery and aircraft between 1000-1800 on 10 April 2022. However, there is no reference to the time of the aerial attack(s). NASA's Fire Information and Resource Management System ([FIRMS](#)) registered a heat signature in this area on 10 April 2022 at 1312 local time. The heat signature was around 0.3km away from the spot that Myanmar Witness identified as being where footage shows objects hitting the ground and causing smoke. While the FIRMS data cannot confirm if aircrafts were used on this day, it demonstrates the presence of fire in a civilian area, possibly indicating clashes with the military on this date. The [location](#) of the heat signal coincides with Myanmar Witness' geolocation of

the incident. While not conclusive, this evidence lends support to the notion that an airstrike took place on 10 April 2022.

Munitions

On April 11 2022, unusual claims of chemical weapons being used surfaced on Facebook, Twitter and [Telegram](#) - from predominantly anti-military social media channels. These claims were also reiterated by [Cobra Column](#).

Myanmar Witness could not identify any UGC of victims experiencing symptoms of a chemical weapon attack nor any other evidence of chemical weapon being used in the area. Images of alleged chemical weapon shell fragments are inconclusive - they show aerial-dropped cargo-munitions, but there is nothing uniquely linking them to chemical weapon use (Figure 20). They are, however, consistent with Myanmar Witness' analysis of the first video - which indicates that airdropped munitions could have been used to cause the destruction seen in the video.



Figure 20: Fragments from a supposedly aerial-dropped munition uploaded by [Cobra Column](#).

Additional images uploaded by [Cobra Column](#) said to have been retrieved after clashes with the military show spent 23mm shells which match the autocannon on the Yak-130 - the aircraft captured in the vicinity of Lay Kay Kaw by the footage analysed in this investigation. These types of munitions can also be used by K-8 (Figure 21) and other MAF aircrafts. Myanmar Witness suspects that these rounds were manufactured in Serbia in 1989 based on the headstamp - which indicate the manufacturing company's initials, year of production and calibre. However, further verification is required to confirm this information.

This further supports the theory that the MAF could have carried out the attack, having access to these kind of ammunition as had been discussed in Myanmar Witness' report [Verifying the export of rockets from Serbia to Myanmar after the military coup](#). There is not enough capacity in a 23mm round for a chemical payload which suggests that these casings are unlikely to be related to claims of chemical attacks.



Figure 21: 23mm munition uploaded by [Cobra Column](#).

Conclusion

Myanmar Witness has investigated claims that, on 10 April 2022, military forces launched an attack on a residential area in Lay Kay Kaw (လေးကျွေ့ကော်). Myanmar Witness has been able to geolocate multiple pieces of footage that show that aerial or artillery attacks occurred causing explosions, fire and smoke. Additionally, at least two different types of munitions appear to have been used. FIRMS data also shows that there was a heat signature in the area indicating that a fire occurred on the day in question.

While no line of direct attribution can be drawn with a specific part of the military, only the MAF has access to the resources to carry out such an attack, including the Yak-130 jets and

Serbian-made ammunition.

Myanmar Witness has identified footage which shows the destruction of civilian homes (Footage 5) and identified fire in the residential area using FIRMS data. Before conflict began, Lay Kay Kaw was a bustling town and place of refuge for those fleeing conflict in other areas of the country. It was designated as a symbolic 'peace town' in recognition of the regional history and conflict with the Myanmar military. The destruction of civilian infrastructure reduces the likelihood that families can return to Lay Kay Kaw once the fighting subsides. The families who had sought refuge in Lay Kay Kaw are once again uprooted.

List of Abbreviations

- | | |
|---|-------|
| ● Fire Information and Resource Management System | FIRMS |
| ● Karen National Union | KNU |
| ● Karen National Liberation Army | KNLA |
| ● Light Infantry Battalion | LIB |
| ● National Unity Government | NUG |
| ● People's Defence Force | PDF |
| ● User Generated Content | UCG |