19-P-21 Appeals Court

COMMONWEALTH vs. MATTHEW DAVIS.

No. 19-P-21.

Suffolk. December 11, 2019. - June 11, 2020.

Present: Hanlon, Lemire, & Hand, JJ.

Armed Assault with Intent to Murder. Assault and Battery. Attempt. Firearms. Electronic Surveillance. Global Positioning System Device. Evidence, Videotape, Photograph, Authentication, Identification, Scientific test. Practice, Criminal, Probation. Practice, Criminal, Required finding.

Indictments found and returned in the Superior Court Department on May 16, 2016.

The case was tried before Peter M. Lauriat, J.

David Rangaviz, Committee for Public Counsel Services (Connor M. Barusch, Committee for Public Counsel Services, also present) for the defendant.
Andrew Doherty, Assistant District Attorney, for the Commonwealth.

HAND, J. A Superior Court jury convicted the defendant, Matthew Davis, of armed assault with intent to murder, G. L. c. 265, § 18 (b); attempted assault and battery by means of

discharging a firearm, G. L. c. 265, § 15F; carrying a firearm without a license, G. L. c. 269, § 10 (a); and carrying a loaded firearm without a license, G. L. c. 269, § 10 (n).[1] On appeal, he argues that the video recording evidence against him was not properly authenticated; global positioning system (GPS) data from a monitoring device on his ankle was not reliable;[2] maps in evidence that correlated to GPS data violated the confrontation clause of the Sixth Amendment to the United States Constitution and the prohibition against hearsay; and the evidence was insufficient to convict him. We affirm.

1. Background. We summarize the facts as the jury could have found them, reserving certain details for later discussion. Mid-morning on September 15, 2015, near the intersection of Quincy Street and Baker Avenue in the vicinity of the Dorchester and Roxbury sections of Boston, the defendant fired at least seven shots from a semiautomatic handgun at a moving car. Two bullets pierced the windshield, and the car crashed into a light

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[1] The defendant also was convicted of possession of ammunition without a firearm identification card, G. L. c. 269, § 10 (h) (1); this charge was dismissed on the Commonwealth's motion. Last, the defendant pleaded guilty to being an armed career criminal on the charge of possession of a firearm without a license.

[2] "A global positioning system (GPS) device is an electronic monitor designed to report continuously the probationer's current location" (citation omitted). Commonwealth v. Thissell, 457 Mass. 191, 191 n.1 (2010) (Thissell II).

pole. The driver, who was the car's only occupant, was unhurt. Immediately after the crash, the driver got out of the car and ran away. The defendant continued on to his home nearby.

At the time of these events, the defendant was being supervised by the Federal probation department, and was subject to GPS monitoring; he wore a GPS monitoring device attached to his ankle. The GPS monitoring system revealed that the defendant had been at the intersection of Quincy Street and Baker Avenue, the location of the shooting, at 10:27 A.M. on the day of the shooting, about a minute before the Boston Police Department received a report about the shooting.

2. Discussion. a. Video evidence. Shortly after the shooting was reported, Sergeant Thomas Carty and another detective went to the scene and canvassed the area for witnesses and surveillance video recordings. From the sidewalk, Carty saw a surveillance camera mounted on the outside of One Baker Avenue between the first and second floors. He spoke with a resident of that address, viewed a video recording taken by the surveillance camera (surveillance video recording), and learned that the camera had been pointed at the intersection of Quincy Street and Baker Avenue at the time of the shooting. Neither the resident nor Carty knew how to download the surveillance video recording to a thumb drive or digital video disc. Instead, Carty used his cell phone's video recording function to

record the resident's surveillance video recording. Over the defendant's objection, Carty's copy (cell phone video recording) of the surveillance camera's recording was played for the jury.

Although the cell phone video recording is grainy, that video showed, among other things, what appears to be a dark-complexioned man in a red shirt or sweatshirt, with dark hair in multiple below-shoulder-length braids and a grey hat or cap. The video depicts the man running toward an intersection and raising his arm while holding what appears to be a handgun. As the man holds the gun with his arm extended, a blue coupe drives into the frame from the opposite direction and collides with a light pole at the corner of the intersection. The video depicts a large black and white sign with red lettering to the right of the damaged coupe, as well as several cars parked across the street from the point of the collision.

On appeal, the defendant contends that because the underlying surveillance video recording was not authenticated, the cell phone video recording should not have been admitted in evidence. He argues that authentication of a surveillance video recording requires either a percipient witness to the recorded events or the testimony of someone with a working knowledge of the surveillance system. We acknowledge that authentication of a surveillance video recording is "typically . . . done through one of [these] two means" (emphasis added), Commonwealth v.

Connolly, 91 Mass. App. Ct. 580, 586 (2017). However, we disagree that these are the only possible ways by which such a video may be authenticated. See Commonwealth v. Chin, 97 Mass. App. Ct. 188, 202-204 (2020). Here, the surveillance video recording was properly authenticated through other means.

> "'The requirement of authentication . . . as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims.' Mass. G. Evid. § 901(a) (2011). See Commonwealth v. Nardi, 452 Mass. 379, 396 (2008); Commonwealth v. LaCorte, 373 Mass. 700, 704 (1977); M.S. Brodin & M. Avery, Massachusetts Evidence § 9.2, at 580 (8th ed. 2007). See also Fed. R. Evid. § 901(a) (2010) (same). 'The role of the trial judge in jury cases is to determine whether there is evidence sufficient, if believed, to convince the jury by a preponderance of the evidence that the item in question is what the proponent claims it to be. If so, the evidence should be admitted, if it is otherwise admissible.' M.S. Brodin & M. Avery, Massachusetts Evidence, supra."

Commonwealth v. Purdy, 459 Mass. 442, 447 (2011). "Evidence may be authenticated by circumstantial evidence alone, including its '[a]ppearance, contents, substance, internal patterns, or other distinctive characteristics.' Mass. G. Evid. . . . § 901(b)(1), (4) [2011]. Fed. R. Evid. § 901(b)(1), (4) (2010)." Commonwealth v. Siny Van Tran, 460 Mass. 535, 546 (2011).

Carty testified that he saw a car, with its driver's side door open, that had crashed into a pole at the intersection of Quincy Street and Baker Avenue. The cell phone video recording depicted a car with its driver's side door open at that

location. Carty also testified that the surveillance camera was aimed at that intersection.

In addition, Carty testified that still photographs were fair and accurate representations of the scene of the shooting and crash. Among these photographs were three of a blue coupe -- the same color and body style as that of the car in the cell phone video recording -- that had crashed into a light pole bearing signs designating Quincy Street and Baker Avenue. Two of the three photographs depicted a sign in front of the crashed car; the sign advertised a church, and was black and white with red lettering. In the cell phone video recording, the same sign is visible in front of the car. The last of the three photographs depicted vehicles across Quincy Street that also appeared in the cell phone video recording.

"Here, the jury could rationally have concluded" from Carty's testimony about the car and surveillance camera and from the authentication of still photographs that correlated with the cell phone video recording, "applying a preponderance of the evidence standard," that the surveillance video recording was authentic. Siny Van Tran, 460 Mass. at 546. The judge did not abuse his discretion in admitting it. Connolly, 91 Mass. App. Ct. at 585.

b. GPS evidence. At the time of the shooting, the defendant wore an "ExactuTrack 1," a GPS monitoring device (ET1

monitor) manufactured by BI, Incorporated (manufacturer). Before trial, the defendant filed a motion in limine to preclude the Commonwealth from introducing evidence through the testimony of its expert, James Buck,[3] of the defendant's location and rate of travel as determined using the ET1 monitor. The defendant argued that the prosecution had not shown that, with respect to the accuracy of its positioning data or determinations of speed, "GPS technology" was sufficiently reliable to meet the Daubert-Lanigan standard governing the admissibility of scientific and technical evidence.[4] See Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993); Commonwealth v. Lanigan, 419 Mass. 15 (1994). See also Commonwealth v. Camblin, 478 Mass. 469, 469-470 (2017) (Camblin II).

Before ruling on the motion, the trial judge conducted a voir dire of Buck.[5] During the voir dire, the defendant focused

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[3] Buck was the manufacturer's manager of product development.

[4] The motion went to the reliability of GPS technology, generally. It did not, as then presented, challenge the reliability of the ET1 monitor, specifically. At trial, the defendant's focus shifted to include a challenge to the reliability of the ET1 monitor; on appeal, the defendant explicitly limits his challenge to the reliability of the ET1 monitor.

[5] On voir dire, Buck testified that the ET1 monitor was comprised of a GPS receiver, a battery, and a cellular connection used "to call in the data" to the manufacturer's data storage facilities, and that the manufacturer purchased each of these components from outside vendors.

on the ET1 monitor, challenging (1) the reliability of the location information derived from it in "urban" or "dense urban" settings, and (2) the speed determinations made using the monitor. In his voir dire testimony, Buck provided an overview of how GPS monitoring technology works,[6] including an explanation of how physical factors that slow the travel of GPS satellite signals can impact the reliability of the resulting positional data.[7] Buck also testified that using a "Doppler effect," GPS data could be used to estimate a GPS receiver's speed.[8]

According to Buck, the ET1 monitor sampled the available satellite signals every fifteen seconds; the receiver

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[6] Buck testified that there are twenty-four active satellites circling the earth, half of which are "overhead" at any given time; the position of each satellite is known; each satellite emits a unique and identifiable signal; and, triangulating the positions of a minimum of three satellites, it is possible to identify the receiver's geographic position by latitude and longitude. This testimony was consistent with the Supreme Judicial Court's "review of the origins of GPS technology" in Thissell II, 457 Mass. at 198 n.15, wherein the court concluded that GPS evidence is sufficiently reliable.

[7] Specifically, Buck testified that GPS positioning accuracy increases as the number of legible signals increases, and that accuracy decreases with any delays in the time it takes for a satellite's signal to be received. To the latter point, Buck testified to several factors that can slow or block a satellite signal, including its being reflected from cars, windows, and buildings in its path.

[8] Buck's explanation of how the Doppler analysis was applied was not detailed.

"select[ed] the best" of those samples and logged it in once per minute; the results were then reported back to the manufacturer once every thirty minutes.[9] Buck testified that the data was then sent from the ET1 monitor over an encrypted cellular network and stored on the manufacturer's servers.

Finally, Buck testified that the positional accuracy of the ET1 monitor had been tested under ideal conditions at the manufacturer's facility, with an accuracy rate of ninety-eight percent within sixteen feet and fifty percent within three feet. The manufacturer had not tested the ET1 monitor in Boston. He testified that the manufacturer's testing of the accuracy of the monitor's speed estimates was done "informally."[10]

After the voir dire, the trial judge denied the defendant's motion to exclude Buck's testimony, and later permitted Buck to testify about GPS, the ET1 monitor, the data gathered from the defendant's monitor, and about maps generated using GPS time and positioning data received by the ET1 monitor worn by the defendant.

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[9] Using its software, the manufacturer could also direct the monitor to "dump all the location data" on demand, or to provide location information once per minute.

[10] Buck, for example, had driven around with an ET1 monitor, and had compared his rate of travel with the speeds determined using the ET1 monitor's data.

On appeal, the defendant disclaims any challenge to the scientific basis or accuracy of GPS technology, generally; instead, he contests the reliability under the Daubert-Lanigan standard of the positional and speed determinations made using the manufacturer's monitor.[11]

i. GPS evidence of defendant's location. Because GPS evidence, "at its core, is scientific evidence, [its] reliability . . . had to be established before . . . it could be admitted." Commonwealth v. Camblin, 471 Mass. 639, 640 (2015) (Camblin I), S.C., Camblin II, 478 Mass. 469, citing Lanigan, 419 Mass. at 25-26. As the proponent of the evidence, the Commonwealth bore the burden of demonstrating that the evidence was more likely than not reliable. See Camblin II, supra at 476. Under the Daubert-Lanigan standard governing the admission of scientific testimony, see Camblin II, supra at 469-470, citing Daubert, 509 U.S. 579, and Lanigan, supra, where there is a challenge to the validity of such evidence, the judge must make "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." Lanigan, supra at 26, quoting Daubert,

[11] We understand the defendant's challenge to be to the reliability of the ExactuTrack 1 model, rather than to the individual unit that the defendant wore.

509 U.S. at 592-593. In making this assessment, the judge "considers a nonexclusive list of five factors[,] . . . [including] 'whether the scientific theory or process (1) has been generally accepted in the relevant scientific community; (2) has been, or can be, subjected to testing; (3) has been subjected to peer review and publication; (4) has an unacceptably high known or potential rate of error; and (5) is governed by recognized standards.'" Camblin II, supra at 475-476, quoting Commonwealth v. Powell, 450 Mass. 229, 238 (2007). Relevant to our discussion, however, "general acceptance in the relevant scientific community . . . continue[s] to be the significant, and often the only, issue." Camblin II, supra at 475, quoting Lanigan, supra. We review the judge's ruling for an abuse of discretion. See Camblin II, supra.

Because "GPS technology . . . is widely used and acknowledged as a reliable relator of time and location data,"[12]

[12] Other jurisdictions have also concluded that GPS data is reliable. See, e.g., United States v. Espinal-Almeida, 699 F.3d 588, 612-613 (1st Cir. 2012), cert. denied, 569 U.S. 936 (2013). See also United States v. Jones, 565 U.S. 400, 428-429 (2012) (Alito, J., concurring) (noting smart phones equipped with GPS technology accurate enough to determine traffic conditions in real time); United States v. Mathews, 928 F.3d 968, 978-979 (10th Cir.), cert. denied, 140 S. Ct. 460 (2019) (no abuse of discretion where Federal District Court declined to hold preliminary Daubert hearing before GPS expert testified; no showing that GPS data product of unreliable method); State v. Brown, 424 S.C. 479, 489 (2018) (noting reliability of GPS technology not genuinely disputed). In fact, some courts have deemed the reliability of GPS data to be a fact of which a judge

Commonwealth v. Thissell, 457 Mass. 191, 198 (2010) (Thissell II), there was no abuse of discretion in the judge's admission of Buck's testimony that GPS data placed the defendant in particular locations at particular times. See Camblin II, 478 Mass. at 475; Commonwealth v. Patterson, 445 Mass. 626, 640 (2005) ("Lanigan's progeny make clear that general acceptance in the relevant community of the theory and process on which an expert's testimony is based, on its own, continues to be sufficient to establish the requisite reliability for admission in Massachusetts courts regardless of other Daubert factors" [emphasis added]). Notwithstanding Buck's testimony that "the technology that [the manufacturer] produce[d]," including firmware used in the ET1 monitor, software used on the manufacturer's server, and "in particular the GPS device in this case" was "proprietary technology," in its totality, Buck's testimony demonstrated that the manufacturer's method of determining a monitor-wearer's geographic position at any given time was no more than the application of existing and scientifically-accepted GPS monitoring technology -- a technology that has been accepted as reliable. See Thissell II, supra (GPS technology "is widely used and acknowledged as a reliable relator of time and location data"). Cf. Camblin I,

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may take judicial notice. See United States v. Brooks, 715 F.3d 1069, 1078 (8th Cir. 2013).

471 Mass. at 645 (Daubert-Lanigan hearing required to examine reliability of "new breathalyzer technology"). The fact that the positioning information derived from the ET1 monitor was, like all GPS information, subject to variations in accuracy depending upon atmospheric conditions, intervening obstacles, or reflection of the satellite signals from buildings, windows, or cars, went to the weight of the evidence, not to the fundamental reliability of the GPS technology as employed in the ET1 monitor. See Sacco v. Roupenian, 409 Mass. 25, 30 (1990) (challenges to expert opinion that may affect weight of testimony should be brought to jury's attention during cross-examination); Rothkopf v. Williams, 55 Mass. App. Ct. 294, 299 (2002). The judge did not abuse his discretion in allowing the Commonwealth to introduce evidence of the positional data. See Camblin II, supra at 476.

ii. GPS evidence of speed. That GPS is a "reliable relator of time and location data," Thissell II, 457 Mass. at 198, does not necessarily mean that the calculation of traveling speed that was presented was also reliable.[13] Cf. Patterson, 445 Mass. at 648 ("The question of the reliability of ACE-V [analysis, comparison, evaluation, and verification] as applied

[13] The speed determinations at issue here purported to show the actual speed at which the device was traveling at given points in time, and not merely an average speed determined using the GPS location data.

to single latent [fingerprint] impressions is distinct from the question of the reliability of ACE-V as applied to simultaneous impressions"). However, even assuming, without deciding, that the Commonwealth's evidence in this case failed to establish the reliability of the speed calculations introduced into evidence, the admission of this evidence requires reversal only if (in light of the defendant's objection to it) the resulting error is prejudicial. See Commonwealth v. Sullivan, 478 Mass. 369, 375-376 (2017), citing Commonwealth v. Cruz, 445 Mass. 589, 591 (2005). We conclude that it was not. Despite the attention paid in the Commonwealth's closing to the issue of the defendant's speed and the inferences that the jury could draw from this evidence about the defendant's mode of travel at different points in time, the Commonwealth's case did not depend on that evidence. The critical issue was where the defendant was at the time of the shooting, not his rate of travel before and after that time. We are confident that any error in the admission of the GPS-based calculations of the defendant's speed "did not influence the jury, or had but very slight effect," and so was not prejudicial. Sullivan, supra at 376, quoting Cruz, supra.

c. Maps created using GPS data. In preparing for the defendant's trial, the manufacturer arranged for an outside mapping company to create a street map identifying each of the

latitude and longitude points reported by the defendant's ET1 monitor in each of the seven minutes before, during, and after the shooting. The manufacturer then added a "dot"[14] to each map representing the defendant's location at the reported point for that time.[15] On appeal, the defendant argues that, because a representative of the mapping company did not testify, the maps violated the prohibition against hearsay and the right to confrontation.

"Hearsay requires a 'statement,' i.e., 'an oral or written assertion or . . . nonverbal conduct of a person, if it is intended by the party as an assertion.'" Commonwealth v. Thissell, 74 Mass. App. Ct. 773, 776-777 (2009) (Thissell I), S.C., Thissell II, 457 Mass. 191, quoting Commonwealth v. Whitlock, 74 Mass. App. Ct. 320, 326 (2009). See Mass. G. Evid. § 801(a) (2019). In Thissell I, this court concluded that, where the maps and logs at issue were generated by a GPS device, and an observer examining those maps and logs could readily see

[14] The "dots" were text boxes on each map including the defendant's name, the date and time, the latitude and longitude coordinates, the estimated speed of the device, and the number of satellites from which data was received at that time.

[15] While Buck's testimony about how the maps and the data visible on them were created was somewhat unclear, the parties appear to agree that this was the net result.

the location of the person wearing the GPS device, the maps and logs were not hearsay. See Thissell I, supra at 777.

In Thissell II, the Supreme Judicial Court declined to reach the question whether the maps generated using GPS data were hearsay evidence,[16] but, noting that "[c]omputer-generated records create unique problems in the context of the rule against hearsay," the court observed that "[s]ome courts have distinguished among types of computer records (similar to the ones at issue here) by classifying them as computer generated or computer stored -- computer-generated records being records generated solely by the electrical or mechanical operation of a computer, and computer-stored records being generated by humans and containing statements implicating the hearsay rule."[17] Thissell II, 457 Mass. at 197 n.13. The court noted that "[b]ecause computer-generated records, by definition, do not contain a statement from a person, they do not necessarily

[16] On review, the court concluded that, in the context of the probation revocation proceeding at issue, it was sufficient to determine that the records were reliable. See Thissell II, 457 Mass. at 197. See also the court's general discussion of computer-generated records, id. at 197 n.13.

[17] The court also noted the existence of "records that constitute a hybrid of both processes . . . ." Thissell II, 457 Mass. at 197 n.13.

implicate hearsay concerns."[18] Id., citing Mass. G. Evid. § 801(a) (2010).

Here, the evidence about the process of translating the location information from the ET1 monitor into a map, while not as well-developed as it might have been, leads us to conclude that the GPS maps and logs here are not hearsay. See Thissell II, 457 Mass. at 197 n.13. According to Buck's testimony, the process of translating the location information from a given ET1 monitor into a map involved the manufacturer's retrieving from that ET1 monitor the latitude and longitude coordinates identified and stored for the desired time period, and sending those data to a mapping company. The mapping company, in turn, used the coordinates to identify a physical location, generated a map of the area to which those points corresponded, and provided the map to the manufacturer. The manufacturer highlighted the defendant's location with "dots" at each coordinate point.

The evidence was that, with the exception of the defendant's name, the information included on the maps introduced at trial, including in the "dots," was generated by the monitor. Accordingly, other than the defendant's name as

[18] In such cases, authentication, and not hearsay, is the primary consideration. Thissell II, 457 Mass. at 197 n.13. The defendant here does not challenge the maps' authentication.

included in the "dots," the maps contained information that could have been determined from that monitor-generated data before the data was used to generate the maps. We therefore conclude that, with the exception of the maps' use of the defendant's name, the maps were not hearsay.[19] See Thissell II, 457 Mass. at 197 n.13. See also Commonwealth v. Royal, 89 Mass. App. Ct. 168, 171-172 (2016) (distinguishing between "computer-generated" records, which do not implicate hearsay concerns, and "computer-stored" records, which are hearsay). The defendant does not raise, and thus, we do not consider, whether the admissibility of the maps entered into evidence required a witness to establish how the maps were created from the data collected by the defendant's ET1 monitor. See Mass. G. Evid. § 1006 (2019). See also Commonwealth v. Bin, 480 Mass. 665, 679 (2018) (map created using cell site location information data admissible where witness testified to his placement of certain call information on map using specific computer program).

We are not persuaded by the defendant's arguments that the introduction of the maps in evidence violated the confrontation clause. First, in light of our conclusion that the maps were not hearsay, the confrontation clause was not implicated. See

[19] In view of this conclusion, we do not reach the Commonwealth's argument that the maps were admissible as business records.

Commonwealth v. Pytou Heang, 458 Mass. 827, 854 (2011), quoting Commonwealth v. Hurley, 455 Mass. 53, 65 n.12 (2009) ("we have stated that 'admission of a testimonial statement without an adequate prior opportunity to cross-examine the declarant . . . violates the confrontation clause only if the statement is hearsay . . .'"). Even assuming, arguendo, that the maps were hearsay, we conclude that the confrontation clause would not apply here. "The confrontation clause bars the admission of testimonial out-of-court statements by a declarant who does not appear at trial unless the declarant is unavailable to testify and the defendant had an earlier opportunity to cross-examine him." Commonwealth v. Wilson, 94 Mass. App. Ct. 416, 417 n.1 (2018), quoting Commonwealth v. Simon, 456 Mass. 280, 296, cert. denied, 562 U.S. 874 (2010). As we discussed, supra, the information represented on the maps came not from a "declarant," but from the GPS receiver, and was simply transmitted by the manufacturer to the mapping company. To the extent that the manufacturer's placement of the "dots" on the map conferred "declarant" status on the manufacturer (a conclusion we do not reach), Buck testified about that process and was vigorously cross-examined on the subject. Cf. Commonwealth v. King, 445 Mass. 217, 236 (2005), cert. denied, 546 U.S. 1216 (2006).

d. Sufficiency of evidence identifying defendant as gunman. The defendant's final challenge is to the sufficiency

of the evidence proving that he was the person who shot at the victim's car.[20] "When reviewing the denial of a motion for a required finding of not guilty, 'we consider the evidence introduced at trial in the light most favorable to the Commonwealth, and determine whether a rational trier of fact could have found the essential elements of the crime beyond a reasonable doubt.'" Commonwealth v. Quinones, 95 Mass. App. Ct. 156, 162 (2019), quoting Commonwealth v. Faherty, 93 Mass. App. Ct. 129, 133 (2018). "Proof of the identity of the person who committed the offense may be established in a number of ways and '[i]t is not necessary that any one witness should distinctly swear that the defendant was the man.'" Quinones, supra quoting Commonwealth v. Blackmer, 77 Mass. App. Ct. 474, 483 (2010). "The inferences that support a conviction 'need only be reasonable and possible; [they] need not be necessary or inescapable.'" Commonwealth v. Waller, 90 Mass. App. Ct. 295,

[20] At trial, the defendant's argument on his motion for a required finding of not guilty challenged the sufficiency of certain of the evidence at trial, but did not explicitly challenge the evidence that the defendant was the gunman. Where the sufficiency of the evidence is raised on appeal, we consider whether or not the issue was raised below. The difference is only in our standard of review -- as preserved error or for a substantial risk of a miscarriage of justice. See Commonwealth v. Nee, 83 Mass. App. Ct. 441, 445 (2013), citing Commonwealth v. McGovern, 397 Mass. 863, 867-868 (1986) (findings based on legally insufficient evidence create substantial risk of miscarriage of justice).

303 (2016), quoting Commonwealth v. Woods, 466 Mass. 707, 713, cert. denied, 573 U.S. 937 (2014).

The GPS evidence placed the defendant at the intersection of Quincy Street and Baker Avenue at 10:27 A.M., one minute before the Boston Police Department received a report of gunshots at that intersection, and showed the path of his travel away from the scene immediately after the shooting.[21]

The surveillance video recording of the shooting showed the gunman to be an African-American male with long braided hair and a long-sleeved red shirt or sweatshirt. See Commonwealth v. Austin, 421 Mass. 357, 366 (1995) (jury capable of viewing videotape and drawing their own conclusions regarding whether individual in videotape was defendant). The defendant is an African-American male who had long braided hair on the day after the shooting; approximately one week after the shooting, Boston police officers discovered a red sweatshirt and a pair of pants containing the defendant's identification in a home at which the defendant was believed to be staying.[22]

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[21] According to the GPS data introduced at trial, from 10:25 A.M. to 10:29 A.M., the defendant followed a clockwise path in the area of the shooting, traveling along Columbia Road onto Quincy Street, through the intersection of Quincy Street and Baker Avenue and onto Baker Avenue, then on Bodwell Street, and back onto Columbia Road.

[22] The home is on Fruean Place, in an area not far from the location of the shooting.

Additionally, at around 10:30 A.M., a woman on Bodwell Street heard sounds that could have been gunshots, and then saw an African-American male with thin braids and a red shirt, with his hand or hands in his pockets, run southeast on the same path documented by the defendant's GPS monitor.[23]

On these facts, and in the light most favorable to the Commonwealth, see Commonwealth v. Latimore, 378 Mass. 671, 676-677 (1979), a rational juror could conclude, beyond a reasonable doubt, that the defendant was the shooter. See Quinones, 95 Mass. App. Ct. at 162-163 (video showing "individual whom the jury could have identified as the defendant" in area of shooting at approximate time of shooting, who was later arrested wearing clothes like those worn by individual depicted in video, sufficient evidence that person in video was defendant). See also Commonwealth v. Jones, 477 Mass. 307, 316 (2017) (evidence of "flight path of the single person seen at the scene of the shooting who generally matched the description of the defendant," together with evidence that person ran away alone "clutching something in his pocket consistent with a firearm," sufficient to allow jury to infer that defendant was shooter);

[23] The witness saw the man run down Bodwell Street toward Columbia Road, then turn right and continue southwest on Columbia Road. The witness was not, however, able to identify the defendant as the man whom she had seen running down Bodwell Street.

Commonwealth v. Booker, 386 Mass. 466, 469 (1982) (flight admissible as some evidence of consciousness of guilt).

Judgments affirmed.