

## Third Combat Brigade of PLA Air Force Likely Receives Stealth Fighters

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On 9 December the Dutch Aviation Society's website Scramble reported that a J-20 bearing the serial number 61162 had been spotted the day before.<sup>1</sup> The J-20 is the first and only fifth-generation<sup>2</sup> fighter that the Chinese People's Liberation Army (PLA) Air Force operates. Judging from this serial number, the aircraft would belong to the 5<sup>th</sup> Aviation Brigade.<sup>3</sup> The brigade would, therefore, be the third combat brigade of the PLA Air Force (PLAAF) to have received stealth fighters.<sup>4</sup> Unfortunately, the report did not include an image of the aircraft or any other information that would enable one to determine the validity of the report.



*The J-20 stealth fighter. Source: Chinese Military Online  
([http://www.81.cn/kj/2021-08/13/content\\_10075111.htm](http://www.81.cn/kj/2021-08/13/content_10075111.htm))*

However, information lending credence to the report has since appeared. The fielding of more J-20s in yet another theater command suggests that the PLAAF is pursuing geographic distribution of the J-20. Although the total number of stealth fighters that the PLAAF possesses may still be low, by geographically distributing the J-20, the PLAAF will likely increase opportunities for units throughout the PLA to train with and against fifth-generation fighters.

### New Evidence of New Stealth Fighters

In a satellite image of the 5<sup>th</sup> Aviation Brigade's airbase on 10 December 2021, four J-20s appeared on the airbase's flight line (see below).<sup>5</sup> The brigade is stationed at an airbase in the southeast of Guilin City, Guangxi Zhuang Autonomous Region.<sup>6</sup> Although the presence of the four fighters at the airbase alone would not necessarily indicate that the J-20s are based there, their presence so soon after a J-20 bearing a serial number of the 5<sup>th</sup> Aviation Brigade was apparently

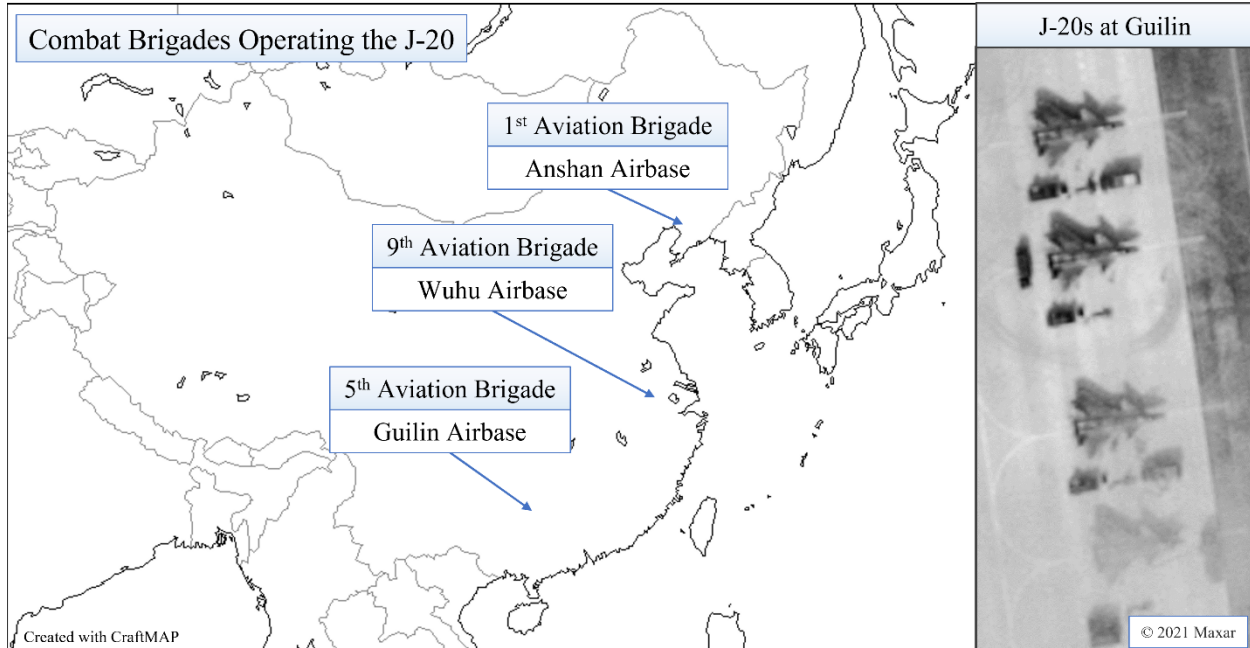
spotted increases the likelihood that the aircraft are based at Guilin and therefore belong to the 5<sup>th</sup> Aviation Brigade. This conclusion is strengthened by another piece of evidence. On 17 January 2022 the Twitter user “observer” (@CN\_military\_21) posted a photograph of a J-20 bearing the serial number 61160 (see next page).<sup>7</sup> This serial number<sup>8</sup> would indicate that the fighter belongs to the 5<sup>th</sup> Aviation Brigade.<sup>9</sup> Assuming that the photograph is real, it can be concluded that the 5<sup>th</sup> Aviation Brigade has received J-20s and that the four J-20s at Guilin indeed belong to the 5<sup>th</sup> Aviation Brigade.

Like the other two units that have received the J-20, the 5<sup>th</sup> Aviation Brigade traces its lineage to a storied unit, the 2<sup>nd</sup> Aviation Division.<sup>10</sup> The other two units, the 1<sup>st</sup> and 9<sup>th</sup> Aviation Brigades, trace their lineages to the 1<sup>st</sup> and 3<sup>rd</sup> Aviation Divisions, respectively.<sup>11</sup> Throughout their histories, all three divisions were the first to receive the PLAAF’s most advanced fighters.<sup>12</sup>

### Total Number of PLAAF’s Stealth Fighters

The fielding of more J-20s naturally begs the question of how many stealth fighters that the PLAAF possesses. It is a question that cannot be answered definitively, but even with the recent additions to the fleet, the PLAAF probably has fewer than is often estimated.

The first units to receive the J-20 were two testing and training units that operate several types of fighters in the same unit. Consequently, they tend to have a small number of each type, perhaps no more than one PLAAF flight group of approximately 8 to 10 aircraft. Therefore, these



two units may together possess 16 to 20 J-20s.

The second combat unit to receive the J-20 was the 1<sup>st</sup> Aviation Brigade.<sup>13</sup> It had received the J-20 by April 2021.<sup>14</sup> As of January 2022, it has at least nine J-20s and at least ten J-20 pilots, including the brigade’s commander (see Appendix). While there may be more of both, the brigade

has not completely replaced its fleet of J-11B fighters. In fact, the brigade operated the J-11B, a variant of the fourth-generation Su-27, throughout 2021 and continues to operate it today.<sup>15</sup> Therefore, even if the 1<sup>st</sup> Aviation Brigade has more than one PLAAF flight group operating the J-20, it is unlikely to have more than two, resulting in a maximum total of 16 to 20 J-20s.



*The photograph of the J-20 61160 that was posted by “observer”*

It would be erroneous to assume that the process of a unit’s transitioning to a different aircraft would proceed at a constant rate and/or proceed at the same rate in all cases, but the example of the 1<sup>st</sup> Aviation Brigade may still shed light on how quickly other combat units have and will transition to operating the J-20. Throughout the eight months since the 1<sup>st</sup> Aviation Brigade was confirmed to be operating the J-20, it might have added J-20s and J-20 pilots at a minimum rate of one of each per month or a maximum rate of two of each per month. (It must be emphasized that these rates are only meant to establish a range of possibilities. In reality, J-20s would be produced and fielded, and their pilots would be trained, in batches.)

The first combat brigade to receive the J-20, the 9<sup>th</sup> Aviation Brigade, began receiving the J-20 in January 2019.<sup>16</sup> If it added J-20s and J-20 pilots at the same minimum rate, it would have completed the transition to operating a full brigade of 24 to 30 J-20s in the first half of 2021. (Again, this is only meant to show that the brigade is likely to have already completed the transition by now. The transition might have finished at a different time.) Therefore, excluding those of the 5<sup>th</sup> Aviation Brigade, the PLAAF may possess 49 to 70 J-20s (33 to 50 in combat units). Because the 5<sup>th</sup> Aviation Brigade only recently began receiving the J-20, it is unlikely to have more than one PLAAF flight squadron of four J-20s, so the total number of the PLAAF’s J-20s may be in the range of 53 to 74 (37 to 54 in combat units). While this is less than the oft-cited estimates of 100 to 150, considering the relatively short length of the stealth fighter’s development (approximately one decade); the cost and time that is necessary for production; and, in particular, the time and effort that is necessary to train pilots to operate, and ground crewmen to maintain, the J-20, this lower estimate is still very respectable.

### **Geographic Distribution over Completing Transitions**

Assuming that the 5<sup>th</sup> Aviation Brigade is operating the J-20, units in each of the PLA’s three coastal theater commands would now operate the fighter: the Northern Theater Command, the Eastern Theater Command, and the Southern Theater Command.<sup>17</sup> The fact that the 5<sup>th</sup> Aviation Brigade began receiving the J-20 before the 1<sup>st</sup> Aviation Brigade completed its transition to the J-20 suggests that the PLAAF is pursuing geographic distribution of the J-20 over completing any single combat unit’s transition to the J-20.

The benefits of distributing J-20s among the three coastal theater commands comprise more than just putting fifth-generation fighters at the commands’ disposal. Having units in three separate geographic commands operate the J-20 should provide nearby units more opportunities

to train with and against fifth-generation fighters. Indeed, in early January 2022 the PLA reported that a pair of J-20s from the 1<sup>st</sup> Aviation Brigade faced a larger formation of dissimilar fighters from a “fraternal unit” in a “small system-of-systems”<sup>18</sup> exercise on the year’s first day of training.<sup>19</sup> Being a “fraternal unit,” not a “neighboring unit,” the opposing force’s fighters likely belonged to another flight group of the 1<sup>st</sup> Aviation Brigade, one operating the J-11B. However, the pair of J-20s was vectored to the opposing force’s aircraft by radar and air defense units outside of the brigade’s chain of command, providing these units an opportunity to operate with the J-20 that they would otherwise only have had during a relatively rare deployment to a testing and training base.<sup>20</sup> In the future, such training opportunities could even extend to units outside the PLAAF, and they will increase as the PLAAF fields more J-20s in additional geographic commands and/or in different locations within a single command.

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## Appendix

J-20s of the 1 <sup>st</sup> Aviation Brigade
61022 <sup>21</sup>
61023 <sup>22</sup>
61026 <sup>23</sup>
61027 <sup>24</sup>
61120 <sup>25</sup>
61121 <sup>26</sup>
61125 <sup>27</sup>
61127 <sup>28</sup>
61128 <sup>29</sup>

J-20 Pilots of the 1 <sup>st</sup> Aviation Brigade			
Photograph		Name	Title
	曹斌	Cao Bin	Pilot <sup>30</sup>
	高中强	Gao Zhongqiang	Commander, 1 <sup>st</sup> Flight Group, 1 <sup>st</sup> Aviation Brigade <sup>31</sup>
	胡佳梁	Hu Jiliang	Pilot <sup>32</sup>

	李凌	Li Ling	Commander, 1 <sup>st</sup> Aviation Brigade <sup>33</sup>
	梁文昭	Liang Wenzhao	Pilot <sup>34</sup>
	石运佳	Shi Yunjia	Pilot <sup>35</sup>
	宋晨光	Song Chenguang	Pilot <sup>36</sup>
	王雨	Wang Yu	Pilot <sup>37</sup>

	许 银 辉	Xu Yinhui	Pilot <sup>38</sup>
	张 昊	Zhang Hao	Pilot <sup>39</sup>

## Notes

<sup>1</sup> Dutch Aviation Society, “First note 5th Air Brigade J-20,” Scramble, December 9, 2021, accessed January 3, 2022, <https://www.scramble.nl/military-news/first-note-5th-air-brigade-j-20>.

<sup>2</sup> The PRC defines aircraft generations differently than in the USA, categorizing what are known in the USA as fifth-generation aircraft as fourth-generation aircraft.

<sup>3</sup> Yefim Gordon and Dmitriy Komissarov, *Chinese Air Power* (Manchester, UK: Hikoki Publications, 2021), 21; Andreas Rupprecht, *Modern Chinese Warplanes: Chinese Air Force – Aircraft and Units* (Houston: Harpia Publishing, 2018), 170.

<sup>4</sup> For information about the second brigade to have received the J-20, see China Aerospace Studies Institute, “Second Combat Brigade of PRC Air Force Likely Receives Stealth Fighter,” Derek Solen, May 3, 2021, <https://www.airuniversity.af.edu/CASI/Display/Article/2593318/second-combat-brigade-of-prc-air-force-likely-receives-stealth-fighter/>.

<sup>5</sup> The author would like to thank Roderick Lee for bringing this to his attention.

<sup>6</sup> Gordon and Komissarov, *Chinese Air Power*, 21; Rupprecht, *Modern Chinese Warplanes*, 170.

<sup>7</sup> Observer, Twitter post, January 17, 2022, accessed January 18, 2022, [https://twitter.com/CN\\_military\\_21](https://twitter.com/CN_military_21).

<sup>8</sup> 61160 was the serial number of one of the 5<sup>th</sup> Aviation Brigade’s J-10Cs. The J-10C is an advanced fourth-generation fighter that is still quite new. “生死 37 秒” [Thirty-seven seconds of life or death], 军事纪实 [Military Documentary], aired April 22, 2021, on CCTV-7, accessed May 4, 2021, [http://www.js7tv.cn/video/202104\\_246042.html](http://www.js7tv.cn/video/202104_246042.html).

<sup>9</sup> Gordon and Komissarov, *Chinese Air Power*, 21; Rupprecht, *Modern Chinese Warplanes*, 170.

<sup>10</sup> Gordon and Komissarov, *Chinese Air Power*, 21; Andreas Rupprecht, *Chinese Air Power in the 20<sup>th</sup> Century: Rise of the Red Dragon* (Vienna: Harpia Publishing, 2019), 180.

<sup>11</sup> Gordon and Komissarov, *Chinese Air Power*, 23, 25-26; Rupprecht, *Modern Chinese Warplanes*, 159, 194; Rupprecht, *Chinese Air Power in the 20<sup>th</sup> Century*, 179, 181.

<sup>12</sup> Rupprecht, *Chinese Air Power in the 20<sup>th</sup> Century*, 179, 180-82.

<sup>13</sup> China Aerospace Studies Institute, “Second Combat Brigade of PRC Air Force Likely Receives Stealth Fighter,” Derek Solen, May 3, 2021, <https://www.airuniversity.af.edu/CASI/Display/Article/2593318/second-combat-brigade-of-prc-air-force-likely-receives-stealth-fighter/>.

<sup>14</sup> Ibid.

<sup>15</sup> “北部战区空军：创新理论引领，奋进强军目标” [Northern Theater Air Force: innovate theory's guidance, advance courageously towards the goal of strong armed forces], 陈列 [Chen Lie], 谭琳 [Tan Lin], 汪飞 [Wang Fei], 王学峰 [Wang Xuefeng], 李东 [Li Dong], 王威 [Wang Wei], 来松敏 [Lai Songmin], 宋东宁 [Song Dongning], 王祖亮 [Wang Zuliang], 焦义宝 [Jiao Yibao], 李月飞 [Li Yuefei], and 鲍振生 [Bao Zhensheng], 军事报道 [Military Report], aired November 2, 2021, on CCTV-7, accessed November 4, 2021, [http://www.js7tv.cn/video/202111\\_261867.html](http://www.js7tv.cn/video/202111_261867.html); 吴龙飞 [Wu Longfei], “做尖刀上的刀尖！这是歼-20 飞行员的极致追求” [Be the blade of the dagger! This is ultimate achievement that J-20 pilots seek], post to 央视军事 [Central Television Military], the official WeChat account of CCTV-7, January 18, 2022, accessed January 18, 2022, <https://mp.weixin.qq.com/s/DbN5hKkdWjCi5xIvfw0DHA>; “直击歼-20 战机超视距空战对抗训练” [Witness beyond-visual-range, air-to-air combat training with J-20 fighters], 马宇辰 [Ma Yuchen], 周凯旋 [Zhou Kaixuan], 闫超 [Yan Chao], 邹梦梦 [Zou Mengmeng], 王学峰 [Wang Xuefeng], 张春阳 [Zhang Chunyang], 许金鑫 [Xu Jinxin], 陆宽 [Lu Kuan], 李东 [Li Dong], 王威 [Wang Wei], 来松敏 [Lai Songmin], 赵俊楠 [Zhao Junnan], and 毕钰 [Bi Yu], 军事报道 [Military Report], aired January 20, 2022, on CCTV-7, accessed January 21, 2022, [http://www.js7tv.cn/video/202201\\_268402.html](http://www.js7tv.cn/video/202201_268402.html).

<sup>16</sup> Gordon and Komissarov, *Chinese Air Power*, 91.

<sup>17</sup> The Central Theater Command is technically a coastal theater command, but it is functionally an inland one. Tellingly, Shandong Province, which hosts a major naval command and which the Central Theater Command abuts, is a noncontiguous part of the Northern Theater Command.

<sup>18</sup> “System-of-systems” is almost synonymous with “combined-arms,” though it includes combat support elements under its rubric. In an air force context, it can refer, for example, to a combination of fighters, special mission aircraft, as well as air defense and electronic warfare units.

<sup>19</sup> “空军航空兵某旅：歼-20 战机参加小体系空中对抗演练” [A certain aviation brigade of the air force: J-20 fighters participate in small system-of-systems, air-to-air combat drill], 陆宽 [Lu Kuan], 毕钰 [Bi Yu], 王联 [Wang



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Lian], and 卜一波 [Bu Yibo], 正午国防军事 [National Defense and Military Affairs at Noon], aired January 7, 2022, on CCTV-7, accessed January 7, 2022, <https://tv.cctv.com/2022/01/07/VIDExNIgDcCOT5DLeLEXT87T220107.shtml>; “空军航空兵某旅：歼-20 战机参加空中对抗演练” [A certain aviation brigade of the air force: J-20 fighters participate in air-to-air combat drill], 陆宽 [Lu Kuan], 毕钰 [Bi Yu], 王联 [Wang Lian], and 卜一波 [Bu Yibo], 军事报道 [Military Report], aired January 7, 2022, on CCTV-7, accessed January 7, 2022, [http://www.js7tv.cn/video/202201\\_267467.html](http://www.js7tv.cn/video/202201_267467.html).

<sup>20</sup> “空军歼-20 部队加强夜训，锻造全时待战空中铁拳” [A J-20 unit of the air force improves its nighttime training, forging an aerial iron fist that is prepared to fight at all times], 王刚 [Wang Gang], 闫超 [Yan Chao], 郭潇宁 [Guo Xiaoning], 邹梦梦 [Zou Mengmeng], 王学峰 [Wang Xuefeng], 李东 [Li Dong], and 王威 [Wang Wei], 国防军事早报 [Morning Report on National Defense and Military Affairs], aired January 17, 2022, on CCTV-7, accessed January 18, 2022, [http://www.js7tv.cn/video/202201\\_268119.html](http://www.js7tv.cn/video/202201_268119.html).

<sup>21</sup> “我驾威龙 飞向未来 李凌：传承红色血脉 直面未来挑战” [I fly the Mighty Dragon into the future: Li Ling inherits the red bloodline and faces the challenges of the future], 正午国防军事 [National Defense and Military Affairs at Noon], aired January 17, 2022, on CCTV-7, accessed January 18, 2022, <https://tv.cctv.com/2022/01/17/VIDECbpfIVqSyIOyzqAt3CyC220117.shtml>; 吴龙飞 [Wu Longfei], “做尖刀上的刀尖！这是歼-20 飞行员的极致追求” [Be the blade of the dagger! This is ultimate achievement that J-20 pilots seek].

<sup>22</sup> 吴龙飞 [Wu Longfei], “做尖刀上的刀尖！这是歼-20 飞行员的极致追求” [Be the blade of the dagger! This is ultimate achievement that J-20 pilots seek].

<sup>23</sup> Ibid.

<sup>24</sup> Ibid.

<sup>25</sup> “我驾威龙 飞向未来 李凌：传承红色血脉 直面未来挑战” [I fly the Mighty Dragon into the future: Li Ling inherits the red bloodline and faces the challenges of the future], 正午国防军事 [National Defense and Military Affairs at Noon].

<sup>26</sup> “直击歼-20 战机超视距空战对抗训练” [Witness beyond-visual-range, air-to-air combat training with J-20 fighters], 马宇辰 [Ma Yuchen], et al., 军事报道 [Military Report].

<sup>27</sup> “我驾威龙 飞向未来 李凌：传承红色血脉 直面未来挑战” [I fly the Mighty Dragon into the future: Li Ling inherits the red bloodline and faces the challenges of the future], 正午国防军事 [National Defense and Military Affairs at Noon]; 吴龙飞 [Wu Longfei], “做尖刀上的刀尖！这是歼-20 飞行员的极致追求” [Be the blade of the dagger! This is ultimate achievement that J-20 pilots seek]; “直击歼-20 战机超视距空战对抗训练” [Witness beyond-visual-range, air-to-air combat training with J-20 fighters], 马宇辰 [Ma Yuchen], et al., 军事报道 [Military Report].

<sup>28</sup> 吴龙飞 [Wu Longfei], “做尖刀上的刀尖！这是歼-20 飞行员的极致追求” [Be the blade of the dagger! This is ultimate achievement that J-20 pilots seek].

<sup>29</sup> “旅长李凌：用“第一”精神飞出胜战航迹” [Brigade commander Li Ling: leave a victorious flight path with the 'number one' spirit], 周凯旋 [Zhou Kaixuan], 马宇辰 [Ma Yuchen], 闫超 [Yan Chao], 邹梦梦 [Zou Mengmeng], 王学峰 [Wang Xuefeng], 张春阳 [Zhang Chunyang], 许金鑫 [Xu Jinxin], 陆宽 [Lu Kuan], 李东 [Li Dong], 王威 [Wang Wei], 来松敏 [Lai Songmin], 赵俊楠 [Zhao Junnan], and 毕钰 [Bi Yu], 军事报道 [Military Report], aired January 17, 2022, on CCTV-7, accessed January 18, 2022, [http://www.js7tv.cn/video/202201\\_268178.html](http://www.js7tv.cn/video/202201_268178.html).

<sup>30</sup> “空军：追寻红色航迹 传承红色基因” [Air force: searching for the red flight path, inheriting red DNA], 闫超 [Yan Chao], 赵健 [Zhao Jian], 陆宽 [Lu Kuan], 向坤 [Xiang Kun], and 杨春雷 [Yang Chunlei], 军事报道 [Military Report], aired June 18, 2021, on CCTV-7, accessed June 22, 2021, [http://www.js7tv.cn/video/202106\\_250506.html](http://www.js7tv.cn/video/202106_250506.html).

<sup>31</sup> “旅长李凌：用“第一”精神飞出胜战航迹” [Brigade commander Li Ling: leave a victorious flight path with the 'number one' spirit], 周凯旋 [Zhou Kaixuan], et al., 军事报道 [Military Report]; “我驾威龙 飞向未来 空战引导 忠诚的“场外僚机”” [I fly the Mighty Dragon into the future: vectoring for aerial combat conducted by a 'loyal wingman' outside the battlespace], 正午国防军事 [National Defense and Military Affairs at Noon], aired January 17, 2022, on CCTV-7, accessed January 18, 2022, <https://tv.cctv.com/2022/01/17/VIDECbpfIVqSyIOyzqAt3CyC220117.shtml>.

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<sup>32</sup> “空军歼-20 部队加强夜训，锻造全时待战空中铁拳” [A J-20 unit of the air force improves its nighttime training, forging an aerial iron fist that is prepared to fight at all times], 王刚 [Wang Gang], et al., 国防军事早报 [Morning Report on National Defense and Military Affairs].

<sup>33</sup> Ibid.

<sup>34</sup> “高隐身性、高机动性、高态势感知 歼-20 壮美航迹印证了人民空军发展壮大历程” [High stealthiness, high maneuverability, and high situational awareness: the magnificent flight path of the J-20 has marked the course of the people's air force's growth in strength], 朝闻天下 [Morning News], aired January 17, 2022, on CCTV-13, accessed January 19, 2022, <https://news.cctv.cn/2022/01/17/ARTIysrk0bF068UCr5oQT1CS220117.shtml>.

<sup>35</sup> “空军：追寻红色航迹 传承红色基因” [Air force: searching for the red flight path, inheriting red DNA].

<sup>36</sup> “直击歼-20 战机超视距空战对抗训练” [Witness beyond-visual-range, air-to-air combat training with J-20 fighters], 马宇辰 [Ma Yuchen], et al., 军事报道 [Military Report].

<sup>37</sup> “高隐身性、高机动性、高态势感知 歼-20 壮美航迹印证了人民空军发展壮大历程” [High stealthiness, high maneuverability, and high situational awareness: the magnificent flight path of the J-20 has marked the course of the people's air force's growth in strength], 朝闻天下 [Morning News]; “直击歼-20 战机超视距空战对抗训练” [Witness beyond-visual-range, air-to-air combat training with J-20 fighters], 马宇辰 [Ma Yuchen], et al., 军事报道 [Military Report].

<sup>38</sup> Ibid.

<sup>39</sup> “人民空军多支英雄部队列装歼-20 战机” [Many heroic units of the people's air force receive the J-20 fighter], 国防军事早报 [Morning Report on National Defense and Military Affairs], aired June 19, 2021, on CCTV-7, accessed June 25, 2021, [http://www.js7tv.cn/video/202106\\_250518.html](http://www.js7tv.cn/video/202106_250518.html).