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Deshalb sind die Onlineesichbarkeit und Rezensionen sehr wichtige Funktionen des Unternehmensprofils für mich." Andrea Nicola Mayr-München, Deutschland 1 Unternehmensprofil erstellen oder ein bestehendes Profil in der Google Suche und auf Google Maps bearbeiten. 2 Öffnungszeiten, Fotos und andere Informationen hinzufügen, um von potenziellen Kunden in der Nähe entdeckt zu werden. 3 Auf Google aktuelle Informationen bekannt geben, auf Rezensionen antworten und mit Kunden in Kontakt treten. 2020 film directed by Om Raut For the real life Military General of the Maratha Empire, see Tanaji Malusare. TanhajiTheatrical release posterDirected byOm RautWritten byPrakash KapadiaOm RautProduced byAjay DevgnBhushan KumarKrishan KumarAjay DevgnSaif Ali KhanKajolNeha SharmaSharad KelkarNarrated bySanjay MishraCinematographyKeiko NakaharaEdited byDharmendra SharmaMusic bySongs:Ajay-AtulSachet-ParamparaMehul VyasScore:Sandeep ShirodkarProductioncompaniesT-Series FilmsAjay Devgn FFilmsDistributed byAA FilmsRelease date 10 January 2020 (2020-01-10) (India) Running time135 minutes[1]CountryIndia[1]LanguageHindiBudget₹172 crore[2]Box office₹368 crore[3] Tanhaji: The Unsung Warrior is a 2020 Indian Hindi-language historical action film, co-written and directed by Om Raut and produced by Bhushan Kumar, Krishan Kumar and Ajay Devgn under T-Series Films. Tracing the life of Maratha warrior Tanaji Malusare, it stars Ajay Devgn in titular role, in addition to Saif Ali Khan and Kajol in important supporting roles, it also features Neha Sharma, Sharad Kelkar and Luke Kenny in other supporting roles.[4] Set in the 17th century, it revolves around Tanaji's attempts to recapture the Kondhna fortress once it passes on to Mughal emperor Aurangzeb who transfers its control to his trusted guard Udaybhan Singh Rathore.The film was originally named Taanaji: The Unsung Warrior but the name was later changed to Tanhaji.[5][6] The film was launched on 20 July 2017, with Raut making his directorial debut in Bollywood. Raut, who previously directed Lokmanya: Ek Yug Purush (2015), for which he received acclaim, the film was simultaneously dubbed in Marathi following popular demand.[7] Principal photography commenced on 25 September 2016.[6][9] Filming took in mostly across the Film City in Mumbai, and few scenes shot at Pune. The cinematography and editing were handled by Keiko Nakahara and Dharmendra Sharma. The background score was composed by Sandeep Shirodkar; the soundtrack album was composed by Ajay Atul, Sachet-Parampara and Mehul Vyas and released under the label T-Series. Tanhaji was released in India in 3D and conventional formats on 10 January 2020.[10] The film received positive reviews, with praise for the performances of Devgn and Khan, the visual effects, cinematography, action sequences, art direction, music, score, and editing. [11] The film grossed ₹3.67 billion (US\$46 million) worldwide & was declared a major success at the box office, thus becoming the highest-grossing Bollywood film of 2020.[3] The film was selected as one of the Best Foreign Film to be screened at the 78th Golden Globe Awards.[12] At the 68th National Film Awards, the film won the awards for Best Popular Film Providing Wholesome Entertainment, Best Actor (for Ajay Devgn) and Best Costume Design. Plot In 1647, Tanhaji's father, Kaloji Malusare trains him in sword-fighting, later succumbing to a Mughal plunder in Umrat. 17 years later in 1664, a now-adult Tanhaji (Ajay Devgn) with his younger brother Suryaji, commands Chhatrapati Shivaji Maharaj's (Sharad Kelkar) Maratha Army to attack an intruding Mughal cavalry. In 1665, the Mughal Emperor Aurangzeb (Luke Kenny) dispatches one of his generals the king of Amber Jai Singh to capture Shivaji to stop his rapid imperial expansion in Deccan, thus he captured Shivaji alongside his 23 forts under his control(battle of purandar). Later, the Mughal general Beshak Khan orders a quick vacation of the strategic fortress Kondhna(now known as sinhagad fort), insulting Jijabai (Padmavati Rao). Shivaji's mother, who swears to remain barefoot until the Marathas recapture the fort. Tanhaji is informed about the treaty as well. Five years later, Shivaji Raje's spy informs him about Aurangzeb's plan to assign the Kondhna fort to his Rajput general Udaybhan Rathod (Saif Ali Khan) and to use it as a base for Aurangzeb's southern imperial expansion. Raje plans to recapture Kondhna, considering himself to lead the campaign as Tanhaji, though an able general, can't be employed due to his son Rayba's upcoming wedding. Meanwhile, Tanhaji celebrates Holi with his family. Marathas begin their war preparations and Shivaji warns his generals to keep Tanhaji from knowing about the campaign. Tanhaji arrives at Rajgad for inviting Shivaji to Rayba's wedding. Chandraji Pisal, a Maratha general, who's attempting to usurp Shivaji Raje's throne, discloses to Tanhaji the secret plan to his nephew Chulnya's recommendation. Tanhaji convinces Shivaji and Jijabai to permit him to lead the campaign and postpones Rayba's wedding. Elsewhere, Udaybhan reaches Durhanpur while the Marathas discuss his route possibilities. Tanhaji coins an attack plan but Pisal sends Chulnya to warn Udaybhan about this plan. Pisal schemes of sabotaging Tanhaji's mission and getting him killed so that Shivaji Raje would then appoint him in-charge of the mission. Pisal intends to become influential enough to overthrow Shivaji Raje and join hands with Udaybhan. Udaybhan is also bringing an imprisoned Kamla Devi (Neha Sharma) en route, the sister of his Rajput general Jagat Singh (Vipul Gupta). Chulnya informs Udaybhan about Tanhaji's attack plan and he tricks Tanhaji into attacking Maratha soldiers disguised under Mughal attire. Elsewhere, Udaybhan reaches Kondhna and aims a huge cannon at Rajgad, threatening Shivaji's safety. Dejected, Tanhaji reaches Kondhna alone to learn about a secret thief-entrance inside. Udaybhan kills a guard for disobeying the security protocol. Tanhaji recovers his dead remains and motivates the villagers to betray Udaybhan. He is recommended to participate in a Shivirati event on Kondhna where he kills Chulnya for betrayal. Tanhaji is imprisoned and tortured by Udaybhan. Jagat Singh secretly releases Tanhaji, revealing Udaybhan's plan to marry his sister. Tanhaji promises to release them from Udaybhan's clutches. Tanhaji escapes from the thief-entrance and returns to Umrat where he informs his people about the upcoming war. Savitri Bai (Kajol), Tanhaji's wife, worries about her husband's life and son's wedding. Tanhaji convinces Savitri Bai that everything will be alright, which she replies to by asking him what he wants from her when he returns. Tanhaji makes Savitri Bai promise to wear bridal attire while waiting for him. Udaybhan hangs the guards responsible for Tanhaji's escape and Jagat Singh agrees to get his sister married to Udaybhan on Ashtami's eve, thus, convincing her to fake the marriage preparation until Tanhaji arrives. Tanhaji now plans to directly attack Kondhna during Ashtami night on 4 February 1670. He scales the fort through various entrances and attacks the Mughal army. The confusion allows Jagat and Kamla Devi to escape. Udaybhan is alerted and Tanhaji dies in the ensuing battle, although he captures Kondhna before killing Udaybhan. Shivaji's army conquers Kondhna but he ends up breaking into tears over Tanhaji's death; saying "Gad aala pan sinh gela" (The fort has been captured but we lost the lion). Later, He personally oversees Rayba's marriage while Savitri Bai fulfill's her promise to Tanhaji by adorning herself as a bride behind closed doors as she awaits his return, and Aurangzeb's dream of winning southern India remains unfulfilled for 18 years until he himself came and retook it from Marathas. Cast Ajay Devgn as Subedar Tanaji Malusare Saif Ali Khan as Udaybhan Singh Rathore Om Raut as Savitri Bai Sharad Kelkar as Chhatrapati Shivaji Maharaj Neha Sharma as Kamla Devi Luke Kenny as Emperor Aurangzeb Vipul Gupta as Jagat Singh Padmavati Rao as Rajmata Jijabai Elakshi Gupta as Soyara Bai Sanjay Mishra as Narrator Shashank Shende as Shelaar Devdatta Nage as Suryaji Malusare Ajinkya Deo as Chandraji Pisal Yuri Suri as Mirza Raja Jai Singh(citation needed) Naufal Azmir Khan as Yuvraj Malusare Jagannath Nivangune as Kaloji Malusare Trisha Patil as Parvati Bai Hardik Sangani as Gondya Nissar Khan as Beshak Khan Prasanna Ketkar as Ghersarnaik Kailash Waghmare as Chulthiya Harsh Sharma as Young Tanaji Ranav Sharma as Young Suryaji Arush Nand as Rayaba Malusare Dhairyaasheel Gholap as Shrubhau Nilesh Lalwani as Tatyra Pramod More as Leader of Gondia Bhagyashree Nhalve as Suryaji's wife Devendra Galkwad as Rayaba's father-in-law Rajesh Ahir as Raja Sangram Singh Angad Mhaskar as Pant Nikhat Khan as Udaybhan's mother Antima Sharma as Nafeesa Niranjan Jadhao as Trimback Rao Shivraj Walvekar as Pratap Rao Rajveer Ankur Singh as Khaibar Khan Ramchandran Singh as Raja Kaka Myrah Dandekar as Rayaba's wife Tufal Khan as Munawar Khan Mridul Kumar as Noor Khan Balg Sandeep Jawatkar as Gujar Ajay Kumar Nain as Rajput Vakil Rakesh Bhavsar as Peshwa Ayaz Malusare Tareeq Ahmed Khan as Mughal Soldier Production Development After completing his work on the directorial venture Shivaji (2016), Ajay Devgn announced his next film on 29 July 2016, titled Sons of Sardar: Battle of Saragarhi.[13][14] a big-budget war film based on the 1897 Saragarhi battle between 21 Sikhs and 10,000 Afghans.[15] Made on a huge scale, Devgn planned to start the production work in late 2016, and decided to release the film on Diwali next year.[16] However, when Karan Johar announced Kesari, another film based on the battle of Saragarhi, Devgn decided to postpone the project after September 2017.[17] In late February 2019, it was reported that Devgn had shelved the project.[18] Meanwhile, Ajay Devgn, decided to do another period film with Om Raut, based on the life of Maratha warrior Tanaji Malusare.[19] which was titled officially as Taanaji: The Unsung Warrior.[20] The first look of Taanaji was released on 20 July 2017,[21] through Devgn's official Twitter account,[22] and pre-production work commenced the following day. In August 2017, a report from Asian Age, claimed that the film will also be made simultaneously in Marathi language, due to the demand of the story, and also Raut's popularity in Marathi, after the success of Lokmanya: Ek Yug Purush (2015).[23] A source claimed that the film's pre-production work will go on for 6–8 months, and Ajay Devgn will start the shoot of the film in March 2018.[24] However, the team undertook heavy VFX works for the film for 6–8 months, and Devgn's NY VFXWAAALA was brought on board for the film,[25] whereas filmmakers planned to release the film in 3D formats, thus delaying the film's shoot to September 2018.[26] On 2 August 2018, Bhushan Kumar of T-Series [27] undertook the project in collaboration with Ajay Devgn's production company and planned to start the shoot in end of September.[28] In March 2019, the film's title Taanaji: The Unsung Warrior was changed to Tanhaji.[29] due to numerical/other reasons.[30][31] Casting In October 2018, Kajol was reported to play the role of Taanaji's wife in the film.[32][33] In January 2019, Saif Ali Khan was reported to play the role of Udaybhan Singh Rathore, one of the main antagonist of the film.[34] For his role, Khan had to prepare for sword fighting and horse-riding, as a part of the character. In an interview with Mid-Day, he stated "A chunk of the research has been done by Om, who has done a thorough job. Since it is an action-packed film, I was required to look leaner. I had to be adept in horse riding. The fact that I was coming straight off Navdeep's [Singh] film (Lal Kaptaan) made it easier. The physical prep has been rigorous for this film." [35] Devgn and Khan had previously collaborated in Vishal Bhardwaj's Omkara (2004). [36] Filming Principal photography began on 25 September 2018.[37] with a muhurat shot given by Om Raut.[38][39] The film's first schedule was commenced in October 2018, with Kajol filming her portions in Mumbai.[40] Tanhaji was filmed mainly at the Film City in Mumbai. Director Om Raut claimed that in the movie, the visual effects have played a major part. The director also said that making the Sandhan Valley set was the biggest challenge for them. The makers had to create a big 300 feet long set to make it look like the Sandhan Valley.[citation needed] In the making video of the film, Raut stated: "Creating the 300-foot long gorge inside a theatre was extremely difficult," adding that the production designers "went and took moulds of the stones and rocks which are there in the valley and they built a wall. And what we did in the effects after that is we put in effects on it." [41] The team of the film also shot some parts at Chitrakoot Ground in Andheri. Some parts of the film were also filmed at Pune.[citation needed] In January 2019, the team kicked off a song shoot which has been mounted on a lavish scale and that a special set was erected for this number.[42] Kajol, however, shot for this number last year, in the last week of December. As the song was so elaborate that the shooting schedule for the same was as long as a week and the number will feature some amazing divya and rangoli setup representing that era. Keeping in the mind the period that the film is set up in, Kajol sported wearing a traditional Maharashtran outfit in the song.[42] In March 2019, a source claimed that 60% of the shoot was completed, and the team took a break, after Devgn being busy for the promotions of his film Total Dhamaal (2019).[43] In April 2019, a climax shoot featuring Devgn and Khan was filmed in a huge scale, and the stunt sequence was choreographed by Ramazan Bulut, who worked in the stunt department for Hollywood films Rush (2013) and Inferno (2016).[44] The principal photography wrapped up in May 2019.[44] Soundtrack TanhajiSoundtrack album by Ajay-Atul, Sachet-Parampara and Mehul VyasReleased8 January 2020[45]Recorded2018–2019GenreFeature film soundtrackLength1:6:25LanguageHindiLabelT-SeriesExternal audio Official Audio Jukebox on YouTube The film's soundtrack album was composed by Ajay-Atul, Sachet-Parampara and Mehul Vyas with lyrics written by Swanand Kirkire and Anil Verma. The background score of the film is composed by Sandeep Shirodkar. The album features four tracks with vocals by Mehul Vyas, Adarsh Shinde, Sukhwinder Singh, Shreya Ghoshal, Sachet Tandon, Parampara Thakur, Ganesh Chandanshive and Harshdeep Kaur. It was released on 20 December 2019 by T-Series.[46] The soundtrack album for the Marathi version had reused the same set of vocals, excluding for some songs, whose vocals were provided by Avadhoot Gupte and Kirti Killedar.[47] Debarati Sen of The Times of India, writing for the soundtrack album in her review, praised "Maay Bhavani" stating "Ajay-Atul has excelled in the beautiful merging of different tempos, and deftly woven in the varied nuances of classical and folk in one single package." [48] Vipin Nair, in his review for The Hindu, stated "With three humbale numbers, the film's music is enjoyable but nothing out of the ordinary." [49] Joginder Tuteja of Bollywood Hungama reviewed "The soundtrack of Tanhaji – The Unsung Warrior delivers as expected. Though there aren't many memorable songs out there, they do well enough to keep the film's narrative engaging." [50]Track listingNo.TitleLyricsMusicSinger(s)Length1."Shankara Re Shankara"Anil VermaMehul VyasMehul Vyas3:312."Maay Bhavani"Swanand KirkireAjay-AtulSukhwinder Singh, Shreya Ghoshal4:183."Ghamand Kar"Anil VermaSachet-ParamparaSachet Tandon, Parampara Thakur4:424."Tinak Tinak"Anil VermaSachet-ParamparaHarshdeep Kaur3:54Total length:16:25 Marketing and release Tanhaji, considered to be one of the most anticipated Hindi films of the year.[51] was initially scheduled to release on 29 November 2019,[52] post-Diwali, but the release was postponed to the necessity of VFX works in a large scale needed for the film.[53] On 28 March 2019, Disney+ Hotstar on 6 March 2020.[76] Reception Box office Tanhaji earned ₹15.10 crore (US\$1.9 million) at the domestic box office on its opening day. On the second day, the film collected ₹20.57 crore (US\$2.6 million). On the third day, the film collected ₹26.26 crore (US\$3.3 million), taking total opening weekend collection to ₹619.3 million (₹61.93 crore (US\$7.8 million)).[3][77] On the fourth day (13 January), the film collected ₹13.75 crore (US\$1.7 million), and film's collection stood at ₹75.63 crore (US\$9.5 million).[78] On the fifth day (14 January), the collection stood much higher after the long holiday weekend owing to Makar Sankranti and the film collected ₹15.28 crore (US\$1.9 million), totalling the first five-day collection to ₹90.96 crore (US\$11 million).[79] On 15 January, the film hit the ₹100-crore mark.[80] as the six-day collections stood up to ₹107.68 crore (US\$13 million).[81][82] At the end of the first week (16 January),[83] the film collected ₹118.91 crore (US\$15 million).[84] The film collected ₹128.97 crore (US\$16 million), on the eighth day of its release,[85] with a strong opening on the second Friday.[86] The film crossed the ₹100 crore mark on the tenth day of its release.[87][88] On 25 January, the film crossed the ₹200 crore mark.[89] as the overall collection stood up to ₹202.83 crore (US\$25 million).[90] On 3 February, the film collected ₹250 crore (US\$31 million) at the box office.[citation needed] At the end of its seventh week, the film collected ₹276.90 crore (US\$35 million).[91] The film managed to earn ₹279.60 crore (US\$35 million).[92] at the domestic box office, within 50 days of its release.[citation needed] As of 13 March 2020, with theatres closure due to the COVID-19 pandemic, the film had accumulated ₹329.81 crore (US\$41 million).[93] in India and ₹34.85 crore (US\$4.4 million) overseas,[94] thus collecting ₹367.65 crore (US\$46 million) worldwide, it became the highest-grossing Bollywood film of 2020.[95][3] Critical response On the review aggregator website Rotten Tomatoes, Tanhaji has an approval rating of 73% with an average score of 6/10, based on 11 reviews.[96] A review over the Hindustan Times noted it to be a magnificent work, which had exceptional individual performances, a captivating story-line and excellent virtual effects.[97] Namrata Joshi of The Hindu noted of the film to have started off well, before floundering in the middle but regaining



[illegible]



realeased products. In June 2006, IMAX and Warner Bros. released Superman Returns including 20 minutes of 3D images converted from the 2D original digital footage. George Lucas announced that he would re-release his Star Wars films in 3D based on a conversion process from the company In-Three. Later on in 2011, it was announced that Lucas was working with the company Prime lens on this conversion.[52] In late 2005, Steve Spielberg told the press he was involved in patenting a 3D cinema system that did not need glasses, based on plasma screens. A computer splits the film-frame, and then projects the two split images onto the screen at differing angles, to be picked up by tiny angled ridges on the screen.[citation needed] Animated films Open Season, and The Ant Bully, were released in analog 3D in 2006. Monster House and The Nightmare Before Christmas were released on XpanD 3D, RealD and Dolby 3D systems in 2006. On May 19, 2007 Scar3D opened at the Cannes Film Market. It was the first US-produced 3D full-length feature film to be completed in Real D 3D. It has been the #1 film at the box office in several countries around the world, including Russia where it opened in 3D on 295 screens. On January 19, 2008, U2 3D was released; it was the first live-action digital 3D film. In the same year others 3D films included Hannah Montana & Miley Cyrus: Best of Both Worlds Concert, Journey to the Center of the Earth, and Bolt. On January 16, 2009, Lionsgate released My Bloody Valentine 3D, the first horror film and first R-rated film to be projected in Real D 3D,[53] It was released to 1,033 3D screens, the most ever for this format, and 1,501 regular screens. Another R-rated film, The Final Destination, was released later that year in August on even more screens. It was the first of its series to be released in HD 3D. Major 3D films in 2009 included Coraline, Monsters vs. Aliens, Up, X Games 3D: The Movie, The Final Destination, Disney's A Christmas Carol, and Avatar.[54] Avatar has gone on to be one of the most expensive films of all time, with a budget at \$237 million; it is also the highest-grossing film of all time. The main technologies used to exhibit these films, and many others released around the time and up to the present, are Real D 3D, Dolby 3D, XpanD 3D, MasterImage 3D, and IMAX 3D. March and April 2010 saw three major 3D releases clustered together, with Alice in Wonderland hitting US theaters on March 5, 2010, How to Train Your Dragon on March 26, 2010, and Clash of the Titans on April 2, 2010. On May 13 of the same year, China's first IMAX 3D film started shooting. The pre-production of the first 3D film shot in France, Derrière les murs, began in May 2010 and was released in mid-2011. On October 1, 2010 Scar3D was the first-ave- stereoscopic 3D Video-on-demand film released through major cable broadcasters for 3D televisions in the United States. Released in the United States on May 21, 2010, Shrek Forever After by DreamWorks Animation (Paramount Pictures) used the Real D 3D system, also released in IMAX 3D. World 3-D Expositions In September 2003, Sabucat Productions organized the first World 3-D Exposition, celebrating the 50th anniversary of the original craze. The Expo was held at Grauman's Egyptian Theatre. During the two-week festival, over 30 of the 50 "golden era" stereoscopic features (as well as shorts) were screened, many coming from the collection of film historian and archivist Robert Furmanek, who had spent the previous 15 years painstakingly tracking down and preserving each film to its original glory. In attendance were many stars from each film, respectively, and some were moved to tears by the sold-out seating with audiences of film buffs from all over the world who came to remember their previous glories. In May 2006, the second World 3-D Exposition was announced for September of that year, presented by the 3-D Film Preservation Fund. Along with the favorites of the previous exposition were newly discovered features and shorts, and like the previous Expo, guests from each film. Expo II was announced as being the locale for the world premiere of several films never before seen in 3D, including The Diamond Wizard and the Universal short, Hawaiian Nights with Mamie Van Doren and Pinky Lee. Other "re-premieres" of films not seen since their original release in stereoscopic form included Cease Fire!, Taza, Son of Cochise, Wings of the Hawk, and Those Redheads From Seattle. Also shown were the long-lost shorts Carmenesque and A Day in the Country (both 1953) and William Van Doren Kelley's two Plasticton shorts (1922 and 1923). Audience decline In the wake of its initial popularity and corresponding increase in the number of screens, more films are being released in the 3D format. For instance, only 45% of the premiere weekend box office earnings of Kung Fu Panda 2 came from 3D screenings as opposed to 60% for Shrek Forever After in 2010.[55] In addition, the premiere of Cars 2 opening weekend gross consisted of only 37% from 3D theatres.[56] Harry Potter and the Deathly Hallows – Part 2 and Captain America: The First Avenger were major releases that achieved similar percentages: 43% and 40%, respectively.[57] In view of this trend, there has been box office analysis concluding the implementation of 3D presentation is apparently backfiring by discouraging people from going to film theatres at all. As Brandon Gray of Box Office Mojo notes, "In each case, 3D's more-money-from-fewer-people approach has simply led to less money from even fewer people." [58] Parallel, the number of televisions sold with support for 3D television has dropped, let alone those sold with actual 3D goggles. According to the Motion Picture Association of America, despite a record total of 47.3D films being released in 2011, the overall domestic box office receipts were down 18% to \$1.8 billion from \$2.2 billion in 2010.[59] Although revenues as a whole increased during 2012, the bulk has so far come from 2D presentations as exemplified by little over 50% of filimgoers opting to see the likes of The Avengers and 32% choosing Brave in their 3D versions. Conflicting reasons are respectively offered by studios and exhibitors: whereas the former blame more expensive 3D ticket prices, the latter argue that the quality of films in general is at fault. However, despite the perceived decline of 3D in the U.S. market, studio chiefs are optimistic of better receipts internationally, where there still appears to be a strong appetite for the format.[60][61] Studios are also using 3D to generate additional income from films that are already commercially successful. Such re-releases usually involve a conversion from 2D. For example, Disney has reissued both The Lion King and Beauty and the Beast, with plans to add some of its other well-known titles.[62] Titanic has also been modified for 3D.[63] and there are also plans to similarly present all six Star Wars films.[64] Jeffrey Katzenberg, a producer of 3D films and one of the leading proponents of the format, blames oversaturation of the market with inferior films, especially ones photographed conventionally and then digitally processed in post-production. He claims that such films have led audiences to conclude that the format is not worth the often much higher ticket price.[65] Daniel Engber, a columnist for Slate, comes to a similar conclusion: "What happened to 3-D? It may have died from a case of acute septiciemia—too much crap in the system." [66] Film critic Mark Kermode, a noted detractor of 3D, has surmised that there is an emerging policy of distributors to limit the availability of 2D versions, thus "railroading" the 3D format into cinemas whether the paying filimgoer likes it or not. This was especially prevalent during the release of Prometheus in 2012, where only 30% of prints for theatrical exhibition (at least in the UK) were in 2D.[67] His suspicions were later reinforced by a substantial number of complaints about Dredd from those who wished to see it in 2D but were denied the opportunity.[68] In July 2017, IMAX announced that they will begin to focus on screening more Hollywood tentpole movies in 2D (even if there's a 3D version) and have fewer 3D screenings of movies in North America, citing that moviegoers in North America prefer 2D films over 3D films.[69] Techniques Further information: Stereoscopic Stereoscopic motion pictures can be produced through a variety of different methods. Over the years the popularity of systems being widely employed in film theaters has waxed and waned. Though analogly was sometimes used prior to 1948, during the early "Golden Era" of 3D cinematography of the 1950s the polarization system was used for every single feature-length film in the United States, and all but one short film.[70] In the 21st century, polarization 3D systems have continued to dominate the scene, though during the 1960s and 1970s some classic films which were converted to analogly for theaters not equipped for polarization, and were even shown in 3D on television.[71] In the years following the mid-1980s, some films were made with short segments in analogly 3D. The following are some of the technical details and methodologies employed in some of the more notable 3D film systems that have been developed. Producing 3D films Live action Main article: Stereo photography techniques The standard for shooting live-action films in 3D involves using two cameras mounted so that their lenses are about as far apart from each other as the average pair of human eyes, recording two separate images for both the left eye and the right eye. In principle, two normal 2D cameras could be put side-to-side but this is problematic in many ways. The only real option is to invest in new stereoscopic cameras. Moreover, some cinematographic tricks that are simple with a 2D camera become impossible when filming in 3D. This means those otherwise cheap tricks need to be replaced by expensive CGI.[72] In 2008, Journey to the Center of the Earth became the first live-action feature film to be shot with the earliest Fusion Camera System released in Digital 3D and was later followed by several others. Avatar (2009) was shot in a 3D process that is based on how the human eye looks at an image. It was an improvement to the existing 3D camera system. Many 3D camera rigs still in use simply pair two cameras side by side, while newer rigs are paired with a beam splitter or both camera lenses built into one unit. While Digital Cinema cameras are not a requirement for 3D they are the predominant medium for most of what is photographed. Film options include IMAX 3D and Cine 160. Animation In the 1930s and 1940s Fleischer Studio made several cartoons with extensive stereoscopic 3D backgrounds, including several Popeye, Betty Boop, and Superman cartoons. In the early to mid-1950s, only half of the major Animation film studios operation experimented with creating traditional 3D animated short subjects. Walt Disney Studio produced two traditional animation short for stereoscopic 3D, for cinemas. Adventures in Music: Melody (1952), and the Donald Duck cartoon Working for Peanuts (1953). Warner Brothers only produced a single cartoon in 3D: Lumber Jack-Rabbit (1953) starring Bugs Bunny. Famous Studio produced two cartoons in 3D, the Popeye cartoon Popeye, the Ace of Space (1953), and the Casper the Friendly Ghost cartoon Boo Moon (1954). Walter Lantz Studio produced the Woody Woodpecker cartoon Hypnotic Hick (1953), which was distributed by Universal. From the late 1950s until the mid-2000s almost no animation was produced for 3D display in theaters. Although several films used 3D backgrounds. One exception is Starchaser: The Legend of Orin. CGI animated films can be rendered as stereoscopic 3D version by using two virtual cameras. Stop-motion animated 3D films are photographed with two cameras similar to live action 3D films. In 2004 The Polar Express was the first stereoscopic 3D computer-animated feature film. The 3D version was solely release in Imax theaters. In November 2005, Walt Disney Studio Entertainment released Chicken Little in digital 3D format, being Disney's first CGI-animated film in 3D. The film was converted from 2D into 3D in post production. nWave Pictures' Fly Me to the Moon (2009) was actually the first animated film created for 3D and released exclusively in 3D in digital theaters around the world. No other animation films have released solely in 3D since. The first 3D feature by DreamWorks Animation, Monsters vs Aliens, followed in 2009 and used a new digital rendering process called InTru3D, which was developed by Intel to create more realistic animated 3D images. InTru3D is not used to exhibit 3D films in theaters; they are shown in either RealD 3D or IMAX 3D. 2D to 3D conversion Main article: 2D to 3D conversion In the case of 2D CGI-animated films that were generated from 3D models, it is possible to return to the models to generate a 3D version. For all other 2D films, different techniques must be employed. For example, for the 3D re-release of the 1993 film The Nightmare Before Christmas, Walt Disney Pictures scanned each original frame and manipulated them to produce left-eye and right-eye versions. Dozens of films have now been converted from 2D to 3D. There are several approaches used for 2D to 3D conversion, most notably depth-based methods.[73] However, conversion to 3D has problems. Information is unavailable as 2D does not have information for a perspective view. Some TVs have a 3D engine to convert 2D content to 3D. Usually, on high frame rate content (and on some slower processors even normal frame rate) the processor is not fast enough and lag is possible. This can lead to strange visual effects.[74] Displaying 3D films Further information: 3D television and 3D Display Analogly Main article: Analogly 3D The traditional 3D glasses, with modern red and cyan color filters, similar to the red/green and red/blue lenses used to view early analogly films. Analogly images were the earliest method of presenting theatrical 3D, and the one most commonly associated with stereoscopy by the public at large, mostly because of non-theatrical 3D media such as comic books and 3D television broadcasts, where polarization is not practical. They were made popular because of the ease of their production and exhibition. The first analogly film was invented in 1915 by Edwin S Porter. Though the earliest theatrical presentations were done with this system, most 3D films from the 1950s and 1980s were originally shown polarized.[75] In an analogly, the two images are superimposed in an additive light setting through two filters, one red and one cyan. In a subtrwctive light setting, the two images are printed in the same complementary colors on white paper. Glasses with colored filters in each eye separate the appropriate images by canceling the filter color out and rendering the complementary color black. Analogly images are much easier to view than either parallel sighting or crossed eye stereograms, although the latter types offer bright and accurate color rendering, particularly in the red component, which is muted, or desaturated with even the best color analoglybs. A compensating technique, commonly known as Anachrome, uses a slightly more transparent cyan filter in the patented glasses associated with the technique. Process reconfigures the typical analogly image to have less parallax. An alternative to the usual red and cyan filter system of analogly is ColorCode 3-D, a patented analogly system which was invented in order to present an analogly image in conjunction with the NTSC television standard, in which the red channel is often compromised. ColorCode uses the complementary colors of yellow and dark blue on-screen, and the colors of the glasses' lenses are amber and dark blue. The polarization 3D system has been the standard for theatrical presentations since it was used for Bwana Devil in 1952.[75] though early Imax presentations were done using the eclipse system and in the 1960s and 1970s classic 3D films were sometimes converted to analogly for special presentations. The polarization system has better color fidelity and less ghosting than the analogly system. In the post-'50s era, analogly has been used instead of polarization in feature presentations where only part of the film is in 3D such as in the 3D segment of Freddy's Dead: The Final Nightmare and the 3D segments of Spy Kids 3-D: Game Over. Analogly is also used in printed materials and in 3D television broadcasts where polarization is not practical. 3D polarized televisions and other displays only become available from several manufacturers in 2008; these generate polarization on the receiving end. Polarization systems cardboard 3D linear polarized glasses from the 1980s similar to those used in the 1950s. Though some were plain white, they often had the name of the theatre and/or graphics from the film Main article: Polarized 3D In the case of the Television system motion picture, two images are projected superimposed onto the same screen through different polarizing filters. The viewer wears cow-cost glasses which also contain a pair of polarizing filters to adapt them for projecting film in the "over-under" format, in which each pair of images is stacked within one frame of film. The two images are projected through different polariz filters, one red and one cyan. This is a very cost-effective way to convert a theater 3-D as all that is needed is the same attachments and a non-depolarizing screen surface, rather than a conversion to digital 3-D projection. Thomson Technicolor currently produces an adapter of this type.[78] A metallic screen is necessary for these systems as reflection from non-metallic surfaces destroys the polarization of the light. Polarized stereoscopic pictures have been around since 1936, when Edwin H. Land first applied it to motion pictures. The so-called "3-D movie craze" in the years 1952 through 1955 was almost entirely offered in theaters using linear polarizing projection and glasses. Only a minute amount of the total 3D films shown in the period used the analogly color filter method. Linear polarization was likewise used with consumer level stereo projectors. Polarization was also used during the 3D revival of the 1980s. In the 2000s, computer animation, competition from DVDs and other media, digital projection, and the use of sophisticated IMAX 70mm film projectors, have created an opportunity for a new wave of polarized 3D films.[46][47] All types of polarization will result in a darkening of the displayed image and poorer contrast compared to non-3D images. Light from lamps is normally emitted as a random collection of polarizations, while a polarization filter only passes a fraction of the light. As a result, the screen image is darker. This darkening can be compensated by increasing the brightness of the projector light source. If the initial polarization filter is inserted between the lamp and the image generation element, the light intensity striking the image element is not any higher than normal without the polarizing filter, and overall image contrast transmitted to the screen is not affected. Active shutter A pair of LCD shutter glasses used to view XpanD 3D films. The thick frames conceal the electronics and batteries. Main article: Active shutter 3D system In this technology, a mechanism is used to block light from each appropriate eye when the converse eye's image is projected on the screen. The technology originated with the Eclipse Method, in which the projector alternates between left and right images, and opens the visible spectrum between the eyes again in synchronizaton with the images on the screen. The active shutter system uses a digital system with a color correcting processor provided by Dolby. The Omega/Panavision system also claims that their glasses are cheaper to manufacture than those used by Dolby.[81] In June 2012 the Omega 3D/Panavision 3D system was discontinued by DPVO Theatrical, who marketed it on behalf of Panavision, citing "challenging global economic and 3D market conditions".[82] Although DPVO dissolved its business operations, Omega Optical continues promoting and selling 3D systems to non-theatrical markets. Omega Optical's 3D system contains projection filters and 3D glasses. In addition to the passive stereoscopic 3D system, Omega Optical has produced enhanced analogly 3D glasses. The Omega's red/cyan analogly glasses use complex metal oxide thin film coatings and high quality annealed glass optics. Autostereoscopy Main article: Autostereoscopy In this method, glasses are not necessary to see the stereoscopic image. Lenticular lens and parallax barrier technologies involve imposing two (or more) images on the same sheet, in narrow, alternating strips, and using a screen that either blocks one of the two images' strips (in the case of parallax barriers) or uses equally narrow lenses to bend the strips of image and make it appear to fill the entire image (in the case of lenticular prints). To produce the stereoscopic effect, the person must be positioned so that one eye sees one of the two images and the other sees the other. Both images are projected onto a high-gain, corrugated screen which reflects light at acute angles. In order to see the stereoscopic image, the viewer must sit within a very narrow angle that is nearly perpendicular to the screen, limiting the size of the audience. Lenticular was used for theatrical presentation of numerous shorts in Russia from 1940 to 1948[71] and in 1946 for the feature-length film Robinson Crusoe.[83] Though its use in theatrical presentations has been rather limited, lenticular has been widely used for a variety of novelty items and has even been used in amateur 3D photography.[64][85] Recent use includes the Fujifilm FinePix Real 3D and the Canon ZOOM LENS 3D. The use of lenticular film does not allow depth perception, saying "I think it's a misnomer to call it 3D versus 2D. The whole point of cinematic imagery is it's three dimensional. 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You know 95% of our depth cues come from occlusion, resolution, color and so forth, so the idea of calling a 2D movie a 2D movie is a little misleading".[100] Nolan also criticised that shooting on the required digital video does not offer a high enough quality image[101] and that 3D cameras cannot be equipped with prime (non-zoom) lenses.[100] Late film critic Roger Ebert repeatedly criticized 3D film as being "too dim", sometimes distracting or even nausea-inducing, and argued that it is an expensive technology that adds nothing of value to the film-going experience (since 2-D films already provide a sufficient illusion of 3D).[102] While Ebert was "not opposed to 3-D as an option", he opposed it as a replacement for traditional film, and preferred 2-D technologies such as MaxVision48 that improve image area/resolution and frames per second.[102] Brightness concerns Most 3D systems will cut down the brightness of the picture considerably – the light loss can be as high as 88%. 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