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glorious agfacolor,

brehtaking totalvision

and monophonic sound

f o u r

colour and "scope" in czechoslovakia

a n n a b a t i s t o v á

The cinema industry was one of the first industries to become state-owned in post-war Czechoslovakia.¹ Although state interference in film production, distribution and exhibition grew as the political climate of the cold war became increasingly tense, it did not stop Czechoslovak cinema from following technological changes which were happening abroad. However, isolation from the western world and political and economical dependence on the centre of socialist power in Soviet Russia caused considerable problems. Efforts to evolve independently inside the socialist block were affected by the growing internationalization, standardization and globalization of the cinema industry.

In this chapter I will examine how this tension between Soviet self-sufficiency and a global cinema market affected the adoption of colour in Czechoslovakian cinema in particular in relation to the change of colour process required by the adoption of widescreen. While the Czechoslovak film industry was content to use low-quality East-German colour film stock in the late 1940s, owing to the international adoption

of widescreen it was forced to exchange it for Eastmancolor during the following decade. In this period therefore the necessity for technological change powered by the global industry overwhelmed the political realities of the Soviet system.

The first mainstream natural colour films were screened in Czechoslovakia well before 1945, including films utilizing various two-colour systems in the 1920s, American Technicolor productions in the 1930s and German Agfacolor films in the 1940s.² Although there were minor independent experiments with colour in the period, and Czech workers helped during production of Agfacolor features at Barrandov studios in Prague during the war, regular colour production would start only after 1945.³

The particular character of the Czech film industry between the wars did not allow for the earlier proliferation of colour films. Since the mid 1920s the state would only licence charitable organizations to run cinemas, which discouraged entrepreneurship and meant that film production was not seen as a profitable enterprise and thus was never supported by banks or other private investors. In addition so many distribution companies were set up in the post-First-World-War period, flooding the market with hundreds of films from all over Europe and the U.S. every year, that they did not leave much space for domestic releases, nor did they enjoy long lives in this highly competitive atmosphere themselves (Heiss and Klimeš 2003: 303–320).

After 1945 on the other hand, the state-owned industry was provided financial protection by vertical integration and, on account of the German occupation of the Barrandov studios during the war, not only were experienced workers and fully equipped laboratories available, but also a limited supply of colour film stock. However, before Czechoslovak cinema ventured into its own colour production, it needed more experience, hosting Soviet colour production in the first few post-war years.⁴ But they could not wait long. Colour production was supposed to prove both the technological and the artistic maturity of the industry. As in other countries, the first attempts at colour cinema were made with short and non-fiction films, and from the latter half of 1945 colour stock was used prominently for both short and feature-length animation. While the focus on short films is understandable due to initial experimenting and high costs of colour stock, the choice of the animation genre not only copied foreign patterns, but also drew on the international reputation of Czechoslovak animation at the time, such as Jiří Trnka's *Animals and Bandits* (*Zvířátka a Petrovští*, 1946) or *The Christmas Dream* (*Vánoční sen*, 1945), collaboration of Karel Zeman, Bořivoj Zeman and Hermína Týrlová, both in Festival de Cannes competition in 1946. The young state-owned industry was in need of reorganization and lacked modern equipment in both production and cinemas, as well as the support of domestic manufacturers of technology and film stock.

In such a situation, colour animated films seemed an ideal product to be exchanged for much needed foreign currency.⁵ For example, in 1947, thirteen out of seventeen short animated films were in colour, as was the only feature-length animated film produced that year, while only one feature out of eighteen and two out of fifty-three non-animated shorts were in colour. At the same time, only some of the films shot in colour were distributed as such at home, the colour copies being reserved for international festivals and the foreign market. The first live action feature film in colour, *Jan Roháč of Dubá* (*Jan Roháč z Dubé*, 1947), was made in 1947 and the production of colour films increased steadily every year until the mid-1950s. Even in the critical year of 1951, when only seven feature films were made in total, two of them were in colour.⁶ The 1950s were also marked by an interesting (but quite understandable) inclination of colour productions towards popular films in general and children's movies in particular. Children's and animated films were successful at international festivals and often sold abroad. They constituted prestige product, not only securing the foreign currency, but also showing both possibilities and abilities of the newly nationalized cinema industry, advertising the idea of socialism.

Before 1945, domestic manufacture of film stock was virtually non-existent, and even in later years only a small amount of black-and-white positive material could be secured internally.⁷ Czechoslovakia thus depended on foreign supply. The negative colour film stock used well into the 1960s was East German Agfacolor, initially bought through the Soviet Union administration after 1945, and later directly from the Agfa factory in Wolfen (from the mid-sixties, the same stock was called Orwocolor). However, since the mid-1950s, the industry had been experimenting with stock by other European manufacturers and with Kodak products, looking for new and better colour material.

It is important to consider at this point how similar the background for decision-making mechanisms are when it comes to comparison of technological change in the nationalized cinema of a socialist country such as Czechoslovakia, and other cinemas governed by the free market. This is largely due to the nature of cinema as an industry. While in the late 1940s and early 1950s the cinemas of the East-European countries tended towards separatism, as did other industries, quite soon the need of at least partial success in the international market became obvious. Also, while Soviet and other socialist countries' films were preferred by individual governments, tastes of the audiences in these countries did not differ much from those in the western world (Skopal 2009). Finally, although the main goal of the cinema was to educate the people in the ways of the new and future socialist world, economics constituted an inseparable force behind the control of the industry.

While shooting in colour was not without issues, screening colour films proved to be equally problematic. Firstly, the quality of the eastern Agfa

stock was low. In various tests conducted in the period, Czechoslovak technicians found the definition of Agfacolor positive materials 50 per cent lower than that of Eastmancolor, while the sensitivity of the emulsion was uneven, sometimes in the same reel. Up to 10 per cent of the Agfacolor material was sent back to Wolfen as faulty every year. Reports from the period comment on the low quality of the colour stock causing problems during shooting and processing (Anon. 1955). Proof of this is evident in the poor colour saturation in scenes with lower intensity of light (for example night scenes) and changes of colour during dissolves which are visible on the surviving prints and recently released digital copies of some films. Second, domestic cinemas were very poorly equipped for the projection of colour films. Nation-wide surveys showed that some cinemas only had one projector and most of them had machines that were more than twelve years old. Even silent-era equipment, only later adjusted for sound screening, was not unusual. Old projectors were feared to be more likely to damage expensive colour copies during screenings. Furthermore, these projectors had very poor lighting properties. Not only did their optics absorb most of the light before casting it on a screen, but also the light sources were insufficient themselves, as were the reflective qualities of materials used to make screens. Before colour, even a dim projector light was enough: black-and-white films required less light to be sufficiently luminous and cinemas in Czechoslovakia were mostly small, with short distances between projector and screen.⁸ Screenings in larger venues, however, revealed the inadequacy of the machines.⁹ Not surprisingly, when reviewing projectors manufactured domestically after 1945, cinema representatives usually complained, about lamp houses and optical arrangement, which had the biggest effect on the light efficiency of the projector.

The survival of Czechoslovak cinema depended on foreign product and the ability to screen films produced abroad.¹⁰ As coordination and division of labour and flow of product inside the Council for Mutual Economic Assistance (COMECON) was still poor, Czechoslovakia could not close itself inside the Eastern bloc, at least from the point of view of the cinema market. Being able to screen foreign films and occasionally sell some domestic product abroad was necessary, and therefore if the foreign product was in widescreen, Czechoslovakia needed to be able to adapt to new formats.

The widescreen revolution brought a new set of concerns for Czechoslovak cinema and they were to test the new organization of the industry after little more than a decade of its existence. Firstly, the administration of the centralized cinema industry had to decide which of the emerging new formats to adopt. Having more than one new format alongside academy ratio was impossible for economic and organizational reasons.¹¹ In the initial anarchy of emerging new formats, Czechoslovak cinema technicians had to decide, or rather guess, which of the formats would get the major share of the cinema screens in the world. As they

started to consider a new format quite late, around the end of 1954 or the beginning of 1955 (and in these years only preliminary research was made, while the actual adoption was planned for 1956), the chosen format was CinemaScope, which was at that point the dominant widescreen format and had a number of fully compatible competitors. While the word CinemaScope appears (in various distortions of the original spelling) in cinema journals and archival documents of the period, this actual brand never made it to Czechoslovakia, and was substituted by compatible European technology for shooting (for instance French Totalvision), and by domestic equipment for screening.

Now that the decision was made, the next step was to prepare the industry for the transition as quickly as possible. A five-year plan was prepared for the period 1956–1960, during which ten features were supposed to be made, and forty cinemas adapted for the new technology. While the number of films actually made corresponded with the initial plan, over 250 cinemas were adapted during the period. Of these, however, only approximately forty had stereophonic sound reproduction alongside the wider image.

While Agfacolor negative stock was barely sufficient for academy ratio shooting and screening, it was even more inadequate for “scope” or even masked formats.¹² As a result, from 1957 the situation became more complicated. For “scope” films, Eastmancolor became the standard, while academy ratio productions continued to use eastern Agfacolor/Orwocolor. We can see this distinction in the film *Death in the Saddle* (*Smrt v sedle*, 1958). The film was shot in two formats, academy on Agfacolor and “scope” on Eastmancolor stock.¹³ A similar situation arose with *Provisional Liberty* (*La Liberté surveillée [V proudech]*, 1957), the first “scope” feature finished in Czechoslovakia, which was a co-production with the French Trident company. According to negotiations, the French co-producer was supposed to supply the Eastmancolor stock, although in fact what they provided was western Agfacolor. Czech cameramen working on the film found the quality sufficient, although the material needed some changes in lighting and laboratory processing. The release copies were printed on Italian Ferraniacolor.¹⁴ *A Midsummer Night's Dream* (*Sen noci svatojánské*, 1959), a “scope” animated feature by Jiří Trnka that went into production in 1956 and was released in 1959, was shot entirely in Eastmancolor. However, in 1956 there was no laboratory to process Eastmancolor in Czechoslovakia, so the rushes were sent to Paris, while Trnka used black-and-white academy materials shot simultaneously to check the movements of his puppets. Also, he was forced to make alterations to his usual methods of puppet-making, due to the differences in colour rendering with Agfacolor and Eastmancolor.¹⁵

While the first colour widescreen films were being made, research groups were formed to compare the qualities of Agfacolor and Eastmancolor

and to investigate possibilities of introduction of the latter into laboratory practice. The main problems were connected with old and insufficient machinery and inaccurate measuring instruments. However, unlike the Agfa/Wolfen factory, Kodak provided technical support during the introduction of the new laboratory equipment and processes, and remained in contact with the Prague laboratories. While preparing for Eastmancolor as a new negative material, Czechoslovak researchers continued to review other colour stocks produced in Europe. Small groups of technicians (usually two or three) were sent to the Soviet Union, as well as the DEFA studios in Germany, the Gevaert factory in Belgium and the Ferrania factory in Italy. During the 1960s and 1970s, Eastmancolor became and remained the main colour stock for negatives and intermediate materials, while cheaper colour processes (most often eastern Agfacolor, later Orwocolor) were used for distribution copies. There were however a few scope films using Agfacolor or Orwocolor negative film stock, especially in the late 1960s.

As in other countries, post-war cinema in Czechoslovakia was threatened by the growing popularity of television, but aspired to coordinate the media to the advantage of both, and the needs of the governing party. In 1972 almost half of the approximately 2,000 cinemas (or 3,400, if we count 16 mm, non-regular and various club, factory or union screening facilities as well) were equipped for "scope". At the same time, these cinemas collected more than 60 per cent of the overall income of the industry. Because of the limited use of widescreen films in television, and television's growing proliferation, 1972 was marked by a decision to save "scope" for productions described as "popular", supposedly attracting larger audiences to cinemas, while "politically important" films were to be shot at academy format, and as such to be more suitable for the new medium. While musicals, comedies or films for young people attracted large audiences during their first few weeks of release, and sometimes during the summer rereleases in open-air cinemas, political dramas and similar were supposed to find their viewers in private homes, repeatedly, for years after their original release (Pílát 1972: unpagéd).

Although the widescreen revolution did not take a direct course and was held back, in Czechoslovakia probably more than elsewhere, it did significantly influence the transition from black-and-white to colour. While eastern Agfacolor was perceived as problematic and inferior from the very beginning, the major impulse for a change of colour system came with the introduction of widescreen in Czechoslovakia, as anamorphic processes tested the limits of the film stock, and made all the known issues even more visible. Czechoslovak studios never saw the real CinemaScope and worked with compatible European "scopes", as the cinemas had to use domestic technology, however clumsy it might be. It was therefore not glorious Technicolor, breathtaking CinemaScope and stereophonic sound at first in Czechoslovakia.

Furthermore, initially Czechoslovak encounters with colour were determined by the character of the cinema industry – low domestic production, small number of cinemas and dependence on international cooperation – rather than by the political situation. Yet after 1945 colour production gained an increasingly prestigious standing from both a political and economic point of view. Politically, colour films were meant to show the accomplishments of the state-owned industry, while economically they constituted a unique source of foreign currency. Ultimately the latter half of the 1950s and the 1960s saw a period of development and expansion in the Czechoslovak industry and liberation in politics and society, which encouraged and enabled the government to spend more on the superior Eastmancolor stock. Where colour film stock was concerned, political issues ceased to be important, and once it became economically possible, the cinema technicians and engineers went for the quality first. Eastmancolor was adopted as the standard negative stock material in the following decades, which in turn saw a significant increase in the number of films made in colour, leaving the use of black-and-white marginal by the end of the communist era in 1989.

notes

1. By the government decree no. 50/1945 on arrangements in the cinema sphere of business, the Czechoslovak state gained a monopoly on cinema production, laboratory processing, distribution, public screenings and international trade.
2. Short Prizmacolor films were distributed in 1921–1922. In December 1923 *The Glorious Adventure* (UK, 1922) premièred and *The Toll of the Sea* (US, 1922) in two-colour Technicolor was released in December 1924 (Štábla 1982: 355–357).
3. For example IRE-film, a Prague studio owned by Irena and Karel Dodal, made several animation shorts in colour between 1933 and 1938 (Strusková 2006: 99).
4. For example, the shooting of Alexander Ptuschko's colour film *The Stone Flower* (Kamennyy tsvetok, USSR 1946) began in August 1945, and the film was the first to be finished in the Barrandov studios after the war.
5. While the studios did not suffer much damage during the war (at least in comparison with other Central and East-European countries), the cinemas were in desperate need of new equipment. According to a post-war survey, up to 85 per cent of them were "insufficient for orderly operation", not only in terms of equipment, but also in issues of hygiene and safety (Bystrický 1947: unpagéd).
6. In 1950, several films were reprimanded by communist party officials and a list of preferred topics was issued. This interference led to a production crisis in 1951, when only a fraction of the originally scheduled 52 films for that year were actually produced.
7. On the other hand, film for still photography had been domestically produced since 1914 by Neobrom, and from 1921 by Fotochema (now Foma), alongside other smaller companies.

8. According to the data collected in 1947, only 110 cinemas had an auditorium longer than 30 metres, and the maximum length was 42 metres (Anon. 1950a: unpagued). In 1950, only nine cinemas had a capacity of more than 1,000, while almost 85 per cent of all cinemas could seat less than 500 (Černík 1954: 89, 198). In later decades, the national cinema network was being improved, also by building new cinemas in previously neglected regions. Of these cinemas, some were constructed especially for widescreen or 70 mm, and as such, they tended to be larger. Also, open-air cinemas, with programming concentrated to summer months, had longer distances between the screen and the projector booth, and could have up to several thousands of spectators. For example, the first “scope” screening in Czechoslovakia during the International Film Festival in Karlovy Vary in summer 1956 took place in a newly constructed open air cinema, which would seat up to 3,500 spectators (Anon. 1956: 9).
9. As the report by a member of Cinema Technology Committee (FITES) states, during the screening at the Fair palace in Prague held in 1950 for the anniversary of the Soviet October Revolution, the visibility of the image was so reduced that a viewer could hardly have recognized that the film was in colour. In conclusion, the report suggested that if the minimum luminance required for colour screening is not achieved, colour films should not be shown at all, as that would ruin their political mission (Anon. 1950b: unpagued).
10. Because of the small number of cinemas, low ticket prices and high costs of production, an average Czechoslovak film would theoretically take thirty-six months to break even, during which time demand would fall dramatically. Thus only extremely popular Czechoslovak films or foreign films turned a profit (Bláha 1955: 12).
11. Although since 1964 some new large cinemas were built for 70 mm projection, Czechoslovak cinema never produced a film on 65 mm negative, except for a handful of co-productions with the USSR. A few other Czechoslovak films were released in 70 mm blown-ups from original 35 mm negatives. It should also be noted that masked formats (1:1.66 and 1:1.85), which could be screened with just small alterations to current projectors, were quite common in Czechoslovakia, but there is no data on their actual proliferation.
12. Only during the 1970s did colour become standard in Czechoslovakia. Until then the majority of both academy and “scope” films were shot in black-and-white.
13. This practice was used for a few early widescreen films, as the Prague laboratories did not have a way to make academy copies from the “scope” originals yet, and at the same time, only a few cinemas were scope-friendly. Having a film on widescreen only would substantially limit its use in distribution.
14. In general, co-production became the way of obtaining quality colour stock and better shooting technology in the late 1950s and during the 1960s (see Skopal 2009).
15. In a monograph on Trnka, the reason offered for switching from Agfacolor to Eastmancolor is the blurriness of the wider image towards the left and right extremes. Also, Eastmancolor is described as more “naturalistic”, showing the materials used to manufacture the puppets for what they really are (Boček 1963: 247–248).

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