



Founded by John Giles.
Inaugurated 11 November 1980

STAND TO!

THE JOURNAL OF THE WESTERN FRONT ASSOCIATION

FOUNDED 1980

JULY 2021

NUMBER 123

www.westernfrontassociation.com



Stereography in the Great War (Part II): Glass slide manufacturers

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An iconic undated Brentano's 45x107mm glass stereoview. While the literal translation for 'corvée de jus' is 'juice chore', idiomatically it means 'drudgery of essence' or 'drudgery of life' (Jordan/Ference Collection).¹

Author's Note: This is the second of a three-part series on stereography during the Great War. Familiarity with Part I, from Stand To! (122 April 2021) is assumed. In order to provide the greatest level of image detail to readers, non-image areas of the glass slides presented have been cropped off.

Introduction

As previously discussed (see Part I), paper card stereography from all the significant manufacturers generally provided simulacra of wartime experience. The Francophone manufacturers of stereoscopic glass slides primarily provided 'the real thing', for a variety of reasons, none more salient than viability. All combatant nations excepting Serbia had severe restrictions, if not outright bans, on photography of any sort at the Front. While the clunky large-format cameras preferred by Anglophone manufacturers could not be stealthily concealed for transport, moved across difficult landscapes and so on, a Richard-style glass plate camera² and 40 small-format dry plates could be stowed inside a spare pair of boots. These cameras could be easily carried on the person and were quick to load in the event that a scene required multiple takes. For every large-format negative pair created for use in a paper card stereoview,

dozens (perhaps hundreds) of small- and medium-format single plate glass negatives were created.³ This larger pool of more diverse and generally more interesting images allowed glass slide manufacturers to create massive quantities of images, and using glass as a substrate for printing diapositives, allowed the viewer to control the effective latitude of the viewing experience.⁴

Unlike consumers in Anglophone countries, in which the everyday non-combatant was unlikely to have witnessed the direct horrors of the war, few civilians on the Continent were likewise spared. Therefore, upon the war's end, a preference arose for the actuality of battle, rather than the idealisation of battle as portrayed in paper card stereography. Even as the war raged on, enterprising companies bought the rights (often by buying the negatives directly) from soldiers, and news outlets paid a premium for authentic combat scenes. While some companies were producing stereoviews during the actual conflict, the vast majority of production took place after the cessation of battle. By Armistice, these enterprises, of which little is actually known, had troves of thousands of scenes to select from. Their offerings, therefore, were in every way (excepting object permanence)⁵ superior to those of the

commercial paper card manufacturers. While the literary tradition generally known as 'existentialism' would not see prominence until the 1940s, the philosophical underpinnings were well in place at the turn of the century, and the First World War was a catalyst for existentialist thought, nowhere more than amongst the Continental nations most closely observing the war. Thus, stereoview demand on the Continent for gruesome imagery, monuments, ruins and chaotic realism trumped the naïve themes of heroism, patriotism, organisation and triumphant idealism generally seen in the paper card stereography of Anglophone nations.

Glass slide stereoview manufacturers

In order to determine whether any given slide was commercially produced, all that is needed is confirmation of duplication; if another copy of the same image can be found with entirely discrete provenance, one can have in excess of 99 per cent certainty that it was a commercial slide. If a third copy with a third provenance is discovered, one can reasonably assert that they *know* that the slide was commercially produced.⁶ Once determined that a slide is commercially produced, the next task is to work out who manufactured it. Almost every commercial slide of Franco-Belgian origin can be traced to one of sources discussed in this article.

Before addressing the differences in output and defining characteristics of these manufacturers, it is important to note there are more similarities than one might initially suspect. With the exception of those of the official SPA photographers working directly with the French army, and a small cadre of Verascope Richard house stereographers, all of the negatives were obtained by each manufacturer from individual soldiers and journalists. The names of these photographers, and any identifying information regarding them, was lost to history long ago, as was almost any information about the companies themselves. Whatever wasn't set aside due to waning interest during the First World War was intentionally destroyed by the Third Reich during its sequel. Therefore, the work of piecing together a narrative from the artefacts themselves falls upon the modern researcher.

All of the companies which manufactured glass views paid photographers directly, both during the war and after, for the rights to use their negatives. Premium 'bounties' were placed on high-demand scenes, such as action at the front, tanks or aviation disasters. Some of the photographers who took these stereoscopic images found a means of doubling, tripling or even quadrupling their 'bounty' for a specific shot; examples of alternate angles on a particular scene appearing from numerous publishers abound.

Most of the major manufacturers (Verascope Richard being a glaring omission) printed slides on both medium-format (6x13cm) and small-format (45x107mm) glass slides. The former are



Images such as this Brentano's 45x107mm glass diapositive rarely appear in Anglophone paper card stereography at all; death scenes were generally staged and not explicit. Every paper card stereoview that even approached this level of gruesomeness was generally licensed or stolen from a Francophone source negative and upsized (Jordan/Ference Collection).

invariably more scarce; aimed at the bourgeois market, they were beyond affordability for the average worker or former soldier. For this reason, many slides were not printed at 6x13cm at all; it is uncertain whether any examples exist of medium-format slides that do not exist alongside small-format versions.⁷ There is a conspicuous reason why many small-format slides exist without medium-format analogues: if the original negative was taken on a small-format camera, it would be difficult to enlarge even the finest of emulsions to look suitable on medium-format glass. It is for this reason that many early battles, notably the Battle of the Yser (16–31 October 1914),⁸ were captured exclusively or primarily on small-format glass plates.

The limitations of small- and medium-format glass stereography were few. The cameras were

small, and with a few exceptions, quite durable. By 1914, a wide variety of emulsions were available, allowing for use in various lighting conditions, often without a tripod or monopod. They could be stowed in rucksacks and taken to the Front; they could also make unobtrusive appearances at state visits, military awards ceremonies and other official events where the large-format cameras used to produce paper card stereoviews would not be welcome. While the exact number of commercial glass views produced during and directly following the war is unknown, most estimates place it in the range of 20–40,000.⁹ These are spread, quite unevenly, among several major (and several minor) manufacturers. For brevity's sake, only manufacturers who produced in excess of one thousand unique images will be considered here.

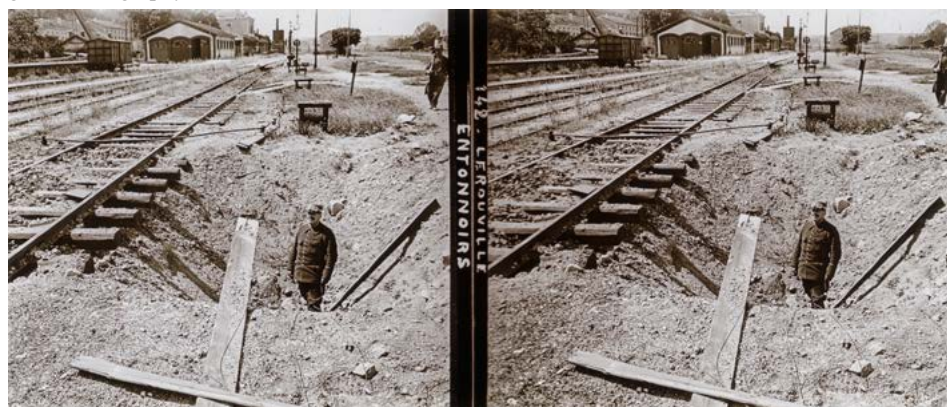
Éditions STL

Unlike the two largest outfits, which will be discussed later, Éditions STL favoured quality over quantity, which is readily apparent in the slightly-fewer-than-two-thousand views that the company released in both formats after the war. Prior to 1914, STL had primarily focused on erotica, producing postcards, photographs and stereoviews sold out of their headquarters in Issy-les-Moulineaux, Paris. For a period after Armistice, they produced high-end stereoviews of wartime scenes; after interest in the Great War faded, they moved on to other topics. Of all of the major contributors to First World War stereography, they were the longest-lived, existing well into the 1940s.

In a variety of tints that ranged from greys and mild coppers to deep sepia tones, the 1,800+ slides making up the Éditions STL catalogue attempted to portray all sides of the French war effort with the highest quality images available. Unlike any other manufacturer that the author could name, no image was included in an STL set unless it was stereoscopically and photographically exceptional. It has been postulated that this is the reason that STL slides commanded a premium even at the time; if they had the best quality images, then presumably they were paying the most for their stock. In any case, a reasonably well-preserved STL slide always demonstrates proper contrast, excellent tonality throughout, good-to-great composition and great use of depth.

The one downside, inasmuch as one considers it so, of Éditions STL is that they were guilty of the same sort of national myopia as was Girdwood and his Realistic Travels, as discussed in Part I of this series. Coverage was almost exclusively of French subjects; the only exceptions were of subjects of extraordinary interest: British tanks, the Dardanelles, the scarred landscape of the Somme. The Eastern Front was ignored entirely, as were the non-French Allied forces. The Germans were always portrayed in a derogatory light; even in death, they were the 'Boche', a stark distinction from some other manufacturers. Just as one could view a set of Realistic Travels paper cards and come away with the impression that the British Empire near-singlehandedly decided the war, one could do the same with Éditions STL and gain a similar impression of the heroic French.

Myopia aside, these views are a stunning record of the French war effort. Nothing brings the struggles of the Engineering Corps into sharper focus than a group of *poilu* working on a railroad line, executed with precise technical and artistic intentionality. The high quality of these images has raised the question of whether the company had a stereographer of their own in the field, and obtained their images through paid trained eyes, rather than buying them outright from independent photographers. This hypothesis, however, is dubious. The French zones along the Front, markedly larger than the British ones, would have been difficult for a single photographer to traverse. Additionally, comparative analysis between STL slides and those of other manufacturers show that at least some of the same images were resold multiple times. It is far more likely that the superior quality of Éditions STL stereography was the result of more careful image selection and higher payments for stereoscopic negatives.



While some of the other purveyors of Great War stereography might have taken a pass on simple but telling scenes such as this one, STL went out of their way to show the war in its completeness – including chores along the railroads and engineering tasks. The relatively low number of this slide (#142) indicates that it was widely produced from the earliest sets released by the company (Jordan/Ference Collection).



On the more sensational side of things, STL did not downplay the animosity between the combatant nations, nor shy away from showing the dehumanising side of protracted trench warfare. With a decidedly pro-French/anti-German sentiment even years after the war, STL was not without its biases. Here, a soldier poses with the 'skull of a Boche', not the 'skull of a German' (Jordan/Ference Collection).



Even if British troops scarcely warranted a stereoview in the STL catalogue, their Mark I's and Mark IV's warranted at least nine (Jordan/Ference Collection).

Verascope Richard

Verascope Richard was the most recognisable name in glass plate stereography prior to the Great War; today, they are still the first name the average collector would call out when asked to name a historically important glass diapositive manufacturer. However, their wartime output is somewhat underwhelming, for a variety of reasons. While they were the only outfit which was known to have house photographers working for them before, during and after the war, it is clear from the images available that these were not *conflict* photographers. Using the typical buckshot approach favoured by the company, these house photographers would shoot box after box of negatives, and the company would release most, if not all, of the stereoviews thus created. Therefore, many quite similar images exist, generally of parades, ceremonies and other scenes well behind the line. If an important figure showed up for a commemoration, one might expect to find a dozen or more alternate images of that figure,

often with the hope that one would come out well, but that all could be sold.

In addition to releasing their own house views, the Richard enterprise purchased images from independent photographers, just like all of their competitors. Some of these images are of astounding quality, which only serves to underscore the biggest downside of Verascope Richard: they only published stereoviews in the more popular 45x107mm format, and therefore, much original detail is lost. Common sense dictates that a small-format positive cannot contain the same amount of information as a medium-format positive, which can contain still less than a medium-format negative. By selling to Verascope Richard, a photographer was dooming their works to being viewed only at sub-optimal quality. Worse still, with the original negatives long lost to time, very few Richard images have been correlated with analogues in 6x13cm medium-format, meaning that only half of the original detail of any given Richard slide is available for the

modern scholar to interpret. This doesn't even address the need to mask and crop medium-format when reducing for production as small-format; entire portions of the original image are never printed.

A final pain point regarding Verascope Richard stereoscopic slides involves their inconsistent numbering schemes. Most slides use a six-digit number which at least helps the researcher place them in some sort of temporal order. However, about a third contain a shorter 'series number', such as the slide of Marshal Foch's funerary procession depicted above. Additionally, some bear no number at all, and it cannot be assumed that these or the latter hand-numbered slides are official Verascope Richard stereoviews at all; it was possible for amateurs to obtain Verascope Richard stock on which to print, and without identified duplicates, production by Richard cannot be assured!

With so many negative marks in their corner, one might be tempted to write off collecting Verascope Richard slides in favour of other manufacturers. However, there are many things to recommend the outfit, warts and all. First and foremost, since they only printed small-format, the company paid a premium for 45x107mm slides, whereas all of their competition preferred 6x13s. While medium-format was preferred by most photographers for obvious reasons, some very good stereographers chose small format, primarily for two reasons: firstly, it was less costly, and secondly it was more readily concealable. While the bulk of Richard's output is of mediocre quality photographically, there is enough of superlative quality to merit consideration. All Richard slides were printed onto durable emulsions and properly fixed; they tend to weather the ravages of age better than those of most manufacturers.

The other major consideration is Richard's widespread coverage, particularly regarding the Somme. Unlike outfits like Éditions STL, Verascope Richard didn't focus on a particular combatant nation so much as they focused on obtaining and printing as many slides as they could get their hands on.¹⁰ With every major Richard acquisition, the possibility of entire new series, sometimes of obscure topics, comes to the fore. While the bulk of this company's output concerned France, there is evidence of colonial subjects, Middle Eastern campaigns and other topics not preferred by other manufacturers. This is the upside to Richard's scattershot approach: by acquiring and printing as much as possible, often regardless of subject or quality, they often show scenes that would be passed over by a more focused approach. Richard is also the only manufacturer that stayed active with Great War themes past the mid-1920s.

La Stéréoscopie Universelle (LSU)

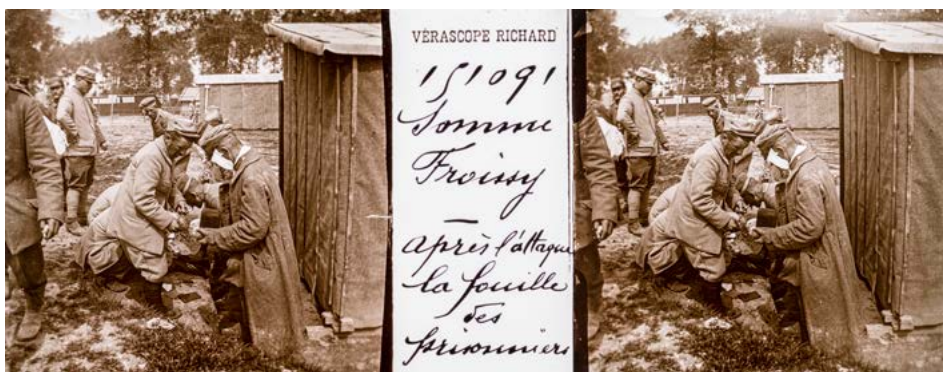
Generally abbreviated as LSU, La Stéréoscopie Universelle was one of the two most prolific manufacturers of Great War glass stereography,¹¹ and the only one provably operating as early as 1915.¹² Almost entirely focused on the French army, LSU's output was relatively well balanced between themes of combat, trench life, aftermath, engineering and 'behind the front', and battle machinery. A significantly diminished emphasis was placed on officers and heads of state than on events, and what 'heroes' were portrayed were the average *poilu* or the Ace, not the commanders



While it was certainly nice to stumble on a few dozen stereoviews from the state funeral for Ferdinand Foch, it is unclear why approximately 450 were published. Many, such as this one, are haphazardly shot views of the funeral procession, with no clear focal point and poor composition. This is characteristic of the Verascope Richard approach to all topics, not just those related to the Great War (Jordan/Ference Collection).



One of comparatively few 'gruesome' scenes released by Verascope Richard, it is clear from aspects of this diapositive that it was downsized from a larger negative. Therefore, some of the complete image is lost, and more than half of the original negative's detail is gone (Jordan/Ference Collection).



Behind the lines at the Somme, prisoners of war are searched for contraband. It is slides such as this that make Verascope Richard stereoviews well worth collecting, despite their significant limitations and many annoyances. Fortunately, it is possible by studying the masking patterns to ascertain that this was taken by a small-format (45x107mm) camera; therefore, the complete image is currently available (Jordan/Ference Collection).

who gave them their orders. LSU aimed for, and achieved, a 'soldier's-eye-view' of the war, though of course artistic license inflated the role of aeroplanes, balloons, tanks and so forth in the day-to-day of things. Regardless, for those looking for an unbiased (and uncensored) three-dimensional 'view from the ground' of

the First World War, LSU was unquestionably king.

This is not to say that LSU didn't play fast and loose with the facts in same the manner of Anglophone paper stereoview manufacturers or the Brentano's collective; they certainly did, and they presented a somewhat falsified version

of the war, at least to the extent that they manipulated the narrative to make it saleable. Of the 3,000+ slides LSU is believed to have produced, former Collection curator Doug Jordan quipped that, '2,900 ought to feature trench digging, sleepless nights, bad rations and desperate requests for socks'.¹³ But while many more German dead were shown than French, LSU generally did not disrespect the fallen in the manner of every other French manufacturer. The matter-of-fact captions tended to prefer 'cadavre Allemande' over 'cadavre Boche', although the same courtesy was not applied to the living. LSU's coverage of French battlefields was almost unparalleled; perhaps more striking was their coverage of trench life, from carving out dugouts and picking lice to playing *manille* and getting a haircut.

It is hard to imagine Keystone View Company or Realistic Travels releasing such a trove of realistic images. A special division of LSU produced the 'LSU Médicale' series of stereoviews, distributed to hospitals and doctors working with wounded veterans. Consisting of roughly 100 images of shrapnel wounds, artillery damage, mangled limbs and so on, the subjects portrayed were almost exclusively dead French soldiers, and the stereoviews themselves were generally taken just before, or in some cases during, autopsy. While never meant for public consumption, a handful of these images have made their way into the Collection. Living casualties were portrayed in publicly available sets, a stark contrast to other major manufacturers, and no punches were pulled in these portraits.

If it sounds as if there are few things to dislike about LSU's coverage of the First World War, perhaps an explanation for the popularity of these images is unnecessary. Of course, LSU's catalogue suffers the same follies as any Francophone glass stereoview manufacturer; there is little coverage of nations other than France and Belgium (although it is better than that of Éditions STL); the colonial troops are underrepresented and the usual suspects (aeroplanes, zeppelins, tanks, rail guns) are overrepresented. All that aside, the author would suggest that if one manufacturer were chosen to best represent the French war effort, it would be LSU. The author would not be alone in holding that opinion.

L'Union Nationale des Combattants (UNC) and Service des Ventes de l'UNC (SDV)

On 12 November 1918, a day after the guns had gone quiet, Catholic chaplain and recipient of both the Croix de guerre and the Légion d'honneur, founded the first major veterans' organisation in France. L'Union Nationale des Combattants (UNC) got off the ground with a 100,000-franc endowment from Georges Clemenceau, and one of the first major actions undertaken by the first president of the UNC, General Léon Durand, was the formation of the Service des Ventes de l'UNC (SDV). SDV's stated aim was to provide soldiers with low-cost or at-cost items related to their military service; stereoviews, which remained popular in France well into the mid-century, were among their offerings. Of all the purveyors of stereography in France, of which there were many, the UNC chose LSU to create their 10-image sets.



Many copies of this very popular slide were printed, generally placing it at one of three forts around Verdun (Douaumont, Souville or Vaux) in either 1916 or 1917. This copy, one of several erroneous printings in the Collection, is the only known one which overtly reveals the chicanery with which almost all manufacturers dealt with ambiguous scenes. The early title-bar caption reads 'near Fort Vaux - 1916', while the later in-view caption reads 'near Douaumont 1917'; it's hard to believe that this (and likely other copies of the same) was sold before the title-bar caption was changed to match (Jordan/Ference Collection).



Louse hunt at the Marne. This wartime print (evidenced by the white title-bar caption) shows the reality of the Great War, rather than the idealisation of war. Although the realities of trench warfare were of course known to the public through letters from the Front, visits from soldiers on leave and so forth, it is surprising that the censors allowed publication of this image while active recruitment was a going concern; no Anglophone paper stereoview publisher even came close to a wartime print such as this. It is this level of realism that cemented LSU as the brand of choice for veterans, and it is no surprise that the outfit was chosen by the UNC to create the official SDV stereoviews discussed below (Jordan/Ference Collection).



'One victim of the Great War'. One might well be reminded of Wilfred Owen's 'Disabled' (1917) when studying this stereoview. While LSU was in no way political, and an argument could be tendered that it had the fewest biases of any manufacturer, the same could not be said about the stereographer who captured this image. Everything, from the choice of a light top and dark trousers with this particular seated pose (implying an inanimate bust) to the backdrop not entirely covering the chair rail of the hospital (implying institutional residency) to the motion blur of the patient or nurse to the right (implying life going on outside this static scene) screams out for sympathy. Artist's intention aside, LSU's publication of this particular image speaks to the totality of the scope of their coverage (Jordan/Ference Collection).



SDV #279. One of very few stereoscopic images known to exist of any of the twenty German A7V tanks produced towards the end of the war. In the number '279', the '27' denotes a set of images from the Aisne, and the '9' denotes this image's position within the 10-stereoview series. The '1067' seen in reverse at bottom left is the LSU negative number for this image (Jordan/Ference Collection).



Every observed copy of this image printed by STERECO, one of several English-language imprints using the Brentano's base set of slides, has the same left/right contrast differential. This points to STERECO possessing an inferior 45x107mm copy negative from which all positive prints were produced (Jordan/Ference Collection).



This depiction of a ruined church accompanied 79 standard Brentano's 45x107mm slides in a collection with the simple descriptor GRANDE GUERRE; no other copies of this particular image have been observed, which opens up the possibility that this is an amateur image. However, its placement in the set suggests that it was sold as part of a cohesive selection; based on the quite popular subject matter, it would seem as if the publisher of GRANDE GUERRE did not share this image with the collective (Jordan/Ference Collection).

Over one hundred ten-image series are known to exist; many were relatively common then (and thus easy to find now), and some have eluded the Collection for decades, although evidence confirms their existence. The idea, which turned out to be quite popular, was to allow soldiers to buy only those stereoviews that concerned their own personal war experience. A soldier who fought at the Marne and was wounded at Verdun would have little interest in 1918 stereoviews from Soissons, and therefore most commercial offerings might be unsuitable, especially on a disabled veteran's pension. SDV's direct mail-order system allowed a veteran to select only those battles and subjects with which they were involved. This explains the commonality of the many 1916 Verdun series, and the scarcity of the 1917 series featuring what is known in France as 'the Second Battle of Verdun'.¹⁴

The Brentano's collective

If a stereoscopic slide from the Great War does not fit into any of the above categories and is provably commercial, it can generally be assumed that it was part of a massive collection of images that have come to be known as Brentano's.¹⁵ While there is some comfort in having a discrete naming convention for such a wide pool of stereoviews, it is important to note that only a small portion of these were actually sold out of the Brentano's bookshop in Paris. There are two competing hypotheses on this collection of slides. The first assumes that these were all manufactured by the same concern, and sold through various outlets, one of them being the Brentano's bookshop. The second assumes that there was a loosely affiliated collective of publishers who each printed their own stereoviews, working from a general 'base pool' of negatives, but adding their own

stock in as available, and that Brentano's bookshop was affiliated with one of the largest of these publishers. Due to an overwhelming preponderance of evidence, the author is firmly in the camp of the second hypothesis.¹⁶

The Brentano's collective is best thought of as a sort of hydra; there was a primary body with many heads. While some of the heads worked synchronously and drew most of their cues from each other (and most of their slides from the primary body), others worked on their own, using the primary body when needed and adding to it to meet their individual needs. What is completely opaque is the exact number of heads in question here; the author is aware of nearly a dozen publishers, but it is almost certain that there were many more. Some slides were so commonly duplicated that over 20 copies exist in the Collection; some so uncommon that they only exist as descriptions or void-spaces in lists. A great deal of piecing together the Brentano's story is reliant on the best possible evidence; confirmation is rarely possible.

The offerings of the Brentano's collective were vast; early estimates put the number of unique images at around 1,000,¹⁷ but more recent estimates suggest it is entirely possible that over 10,000 different stereoviews exist, with some being extremely rare.¹⁸ The topical range of the Brentano's collective was similarly massive, if somewhat unfocused; one can imagine their motto regarding the purchasing of negatives was 'if we don't have it, we'll take it'. Quite a lot of mundane views exist, and these are often the least common, which makes an exact total impossible to pin down. A core group of several hundred slides were available in 6x13cm medium-format, but the bulk of the Brentano's output was confined to 45x107 small-format slides. The Jordan/Ference Collection is partnering with the Western Front Association to make the first earnest effort to catalogue and describe Brentano's slides; in late July, a much more detailed analysis of these stereoviews will appear on the WFA website.

Considerations on commercial glass stereography in modern Great War studies

Unlike the paper card stereoviews considered in the first article of this series, commercial glass stereoviews present an accurate depiction of the Great War, albeit generally from a Francophone perspective. Like the paper views, these glass artefacts provide a valuable window into the mindset of their audience, a good portion of which included veterans of the war. It is clear that this audience, who'd had an entirely different wartime experience than those separated from the daily action by water, was more eager to accept the reality of war, and so realistic portrayals are the rule in glass stereography.

The discovery of each new stereoview, as well as its placement within the greater tapestry of First World War commercial glass stereography, contributes something to the story of 1914–1918 that was previously forgotten. The author will be the first to acknowledge that this contribution is not orders of magnitude larger than the discovery of a new ordinary commercial photographic print from the era; the depth added by the third dimension does have significance, as discussed in Part I of this

series, but it is not *overwhelmingly* significant.

What makes these artefacts so intriguing is that each manufacturer provided a cohesive body of work, and that each of these bodies of work was forgotten for the better part of a century. While oral traditions have persisted and kept a basic understanding of the glass manufacturers alive since the stereoscopic dark age, it is only in the digital era that these traditions have crystallised into cohesive narratives. Due to scope limitations, the role of the SPA (*section photographique de l'armée*) was not considered in this article, but the overlap between official stereoviews commissioned by the French army and the commercial glass stereoviews discussed today is worthy of at least a mention. The fact that a viable still image can be retrieved from either half of a stereoview should not escape consideration; the reverse is clearly not true.

It is also worth noting that the stereoscopic effect achieved by the best of these images is staggeringly powerful; because of the ethereality of glass as a substrate, with the proper stereoscope, viewing subjects can imagine themselves in a dugout at Verdun, a church-turned-shelter at the Marne, a hastily constructed cemetery in Mesnil or in any number of other Great War scenes. It is an unfortunate fact of digitisation that the full effect of these artefacts can only be hinted at in reproductions like those above or like the tens of thousands available online; there truly is no viable substitute for experiencing glass stereography in person. Regardless, it is remarkable that over the course of a few short decades, glass stereography of the Great War has leapt out of dingy basements and dusty attics back into a discrete area of study within the greater context of the history of the war.

The author would like to acknowledge some people without whom this article would have been impossible (or at least, much more difficult). First and foremost, his mentor and dear friend Doug Jordan (1961–2020). Additionally, André Ruitier, Pascal Martiné, Pascale V and Stacey Doyle Ference, who lent their knowledge or their eyes on early drafts.

References

- ¹ Pers. Comm. Pascale V, 26 September 2019.
- ² In 1890, noted French inventor Jules Richard patented a system of handheld stereoscopic cameras and viewers in a variety of sizes; the two most prevalent during the Great War were 45x107mm ('small-format') and 6x13cm ('medium-format').
- ³ Pers. Comm. Doug Jordan, 9 January 2020
- ⁴ 'Effective latitude' when referring to a photographic image denotes the variance between the detail in the highlight and shadow areas of the image. When looking at a glass stereoview of the entrance to a darkened dugout, one can see the details of the clouds in the sky by pointing the viewer towards a low, diffused light source; similarly, detail within the dugout can be discerned by aiming the frosted glass viewer back at a bright point light source. The author laments that this experience cannot be reproduced digitally or in print media to highlight the superiority of glass as a photographic substrate for the reader.

- ⁵ In addition to the obvious problems presented by the fragility of glass, the emulsions used are subject to many problems to which properly fixed paper prints are immune, including extreme sensitivity to water damage, water solubility of the emulsion proper, edge oxidation, and susceptibility to minute scratching from rubbing against even the smallest (micrometers) particulate. It is commonly, and correctly, asserted that every action performed on a glass stereoview degrades it in some fashion.
- ⁶ For simplicity's sake, the standard of 'to "know" is to hold a justified true belief' will be used in parsing the semantic intension of 'know'.
- ⁷ This statement is made in full knowledge of the fact that the Collection possesses medium-format slides for which its principal participants have not seen analogues; lacking proof of existence is obviously far removed from proof of nonexistence, and every year the list of 6x13cm slides with no 45x107mm analogues grows shorter. It is the author's belief that, within the commercial realm, there are likely no examples of this phenomenon to be found.
- ⁸ In point of fact, it appears as if only one photographer, whose works appear as LSU slides numbered 30xx–31xx, captured key moments in this battle stereoscopically. The author is currently working to identify this photographer based on unique characteristics of his small-format camera.
- ⁹ The lower estimates were made prior to some recent discoveries which point towards the higher estimate, which the author would suggest is likely somewhere near correct. Most of these discoveries concern minutiae in numbering schemes

and are well outside the scope of this article (or the likely interest of its readers).

- ¹⁰ Nobody has a firm estimate as to how many Richard stereoviews are out there; the author is struck by the fact that every large acquisition of this brand contains pointers to entire missing collections. The 150XXX–151XXX series seems entirely concerned with the Somme; if all numbers are filled in here, this makes for over one thousand Somme images in total.
- ¹¹ 'Prolific' here is meant to refer to total number of stereoviews produced and sold, not to total number of *unique* stereoviews produced and sold. It is very likely that Verascope Richard had a more extensive catalogue, and certain that the Brentano's collective did.
- ¹² Bob Boyd's 2007 research notes.
- ¹³ Pers. Comm. 11 November 2018.
- ¹⁴ The retaking of Mort-Homme and Côte 304.
- ¹⁵ In the interest of full disclosure, it should be noted that the adoption of 'Brentano's' as a blanket moniker for this loosely affiliated group of publishers is a direct result of the adoption of such by the two founders of the Collection in the late 1990s/early 2000s. The author was not involved with the Collection at this point in time.
- ¹⁶ This debate is worthy of its own article, but briefly, some of the deciding factors include the number of slides which only seem to appear in one form or another, the non-consistent numbering scheme across some identified publishers, the repetition of scratches in copy negatives for particular versions, and the catalogues of some of the imprints (STERECO, Over There Review, etc.)
- ¹⁷ Bob Boyd's research notes, early 2000s.
- ¹⁸ Pers. Comm. 25 September 2019.



A few daily-use stereoscopes and glass slide ephemera: (Rear) A Planox Magnétique, capable of displaying 20-stereoview slide shows in medium format (6x13cm), three boxes which contained 300 Stéréo Éditions slides (one of many Brentano's imprints), a Unis Métascope capable of displaying 25 slides in either small (45x107mm) or medium format. (Centre) A Unis handheld small-format stereoscope. (Bottom) A Unis handheld medium-format stereoscope, an LSU 6x13cm slide, a Brentano's 45x107mm slide, a German ICA viewer. (Author's personal collection).

