Caravan Thinkscape/Caravans of the North

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Abstract

This study employs a case study comparison of caravan practices in the 20th c in northern Chile and in northern Canada in order to highlight generalized ancient caravan lifeways. Ethnographers, archaeologists, and historians have studied caravans – long-distance trade via pack animals – in the remote areas of the world where caravans travel(led). Some of these areas include the Sahara in Egypt, the northern deserts of China and adjacent areas in Asia, and the Andes of South America. Comparative studies of modern (ethnography) and historical caravans and caravanning have been used to inform interpretations of archaeological expressions of caravans, particularly in regions where there is no written history until hundreds or thousands of years after the use of caravans began, such as in the Andean region. Comparative and independent studies of caravanning indicate that political, economic, social, kinship, and environmental factors played various roles in the creation and maintenance of caravan lifeways. An examination of the historic caravans of northern Canada in the 20th c. reveals compelling historical, technological, economic, social, political, and kinship comparisons to the entirety of caravan travel. The transport of goods across the northern reaches of the Canadian prairie provinces was spurred by mining and logging interests, and began with horses and donkeys, subsequently shifting to gasoline engine power when they became available, via "cat (caterpillar tractor) freight trains". In northern Chile, camelid caravans had been replaced in many instances by horse and donkey caravans to haul the goods required for mining copper and nitrate. As vehicles became available, the horse and donkey caravans were replaced at the same time that roads were built, often along the same trails that had been used by animal caravans for hundreds and thousands of years. While rapid and convenient vehicle transport is widely available in both areas, transport that is dependent upon and limited by specific environmental parameters has not been universally replaced, and continues to fill important social, economic, and political roles that can be considered in reviewing and reconstructing ancient caravan lifeways.

Ever since I discovered Anatoly Khazanov's *Nomads and the Outside World* (1984, 1994), I have been transfixed by comparisons of caravaners– people who travel for weeks and months at a time, relying upon memory of landscape and social contacts, experts in political and economic survival - throughout time and space. Caravaners may travel with family or with economic partners, and rely upon both kin and non-kin hospitality en route, much in the way that Melanesian Trobrianders rely upon their trading partners maintained across generations (Malinowski 1922; Mauss 1970; Weiner 1992), and Kalahari Jo/hoansi rely upon their non-kin social partners [*hxaro*] for survival when outside of their 'home' territory (Lee 2013). What skills and knowledge are required for those who undertake seasonal or annual trade journeys with pack animals, what makes a successful caravaner beyond the luck of survival through

sometimes unpredictable/unreliable environmental or social zones? What factors link the personality and actions of caravaners over time and space?

My actual experience with Andean caravans is limited to a week-long re-creation of a caravan undertaken in 2000 with Lautaro Núñez and Luis Briones for the purposes of a documentary entitled *La Última Caravana*. To complement, or in lieu of, this brief experience, I have spent much time walking on caravan trails and camping in the Atacama desert alone, as well as in the company of my colleagues Luis Briones and Oscar Varela, as well as with colleagues at the Museo San Miguel de Azapa near Arica. I've got a good sense of direction, I can think my way to finding disrupted trails with excellent results, and I've got a good sense of the kinds of places where people camped or stopped to make offerings before proceeding. But I travel where there are no longer permanent settlements, I rarely cross ecological zones, and I have not encountered anything but one errant hummingbird, a bat, and an occasional condor. What is the practical side of the journey – the social, political, or economic skills that play into successful caravanning?

In recent decades there have been numerous ethnographic studies on caravanning peoples that provide invaluable insight for specific analogies and cross-cultural comparisons to comprehend precontact practices, organization, and values, and the Andean research includes studies on the mixed economies of pastoralists who engage in caravanning (Flores Ochoa 1975, 1977, 1988; Capriles and Tripcevich 2016; Nielsen 1997, 1997-1998, 2011; Núnez and Nielsen 2011). At this workshop we have the opportunity to hear from several participants about disparate studies in the Andes, Asia, and Africa.

The extant ethnographic comparisons of caravans are applied to regions of similar geography, environment, and lifeways. The traditional caravans of both the Old and New Worlds traversed through what some might call desolate landscapes: arid lands dotted with oases, concentrated pockets of dispersed settlements. The long distances between rest and trading points require(d) caravanners to be away from home for extended periods of time, and the journeys required physical resilience and situational ingenuity for social, physical, and political encounters, plus intelligent management of the animals necessary to caravanners (and later, mechanical ability with powered vehicles).

We have both models and exemplars to reconstruct the caravans of old: ethnographic and historic studies of existing caravaners, augmented by the archaeological evidence and interpretations. The ethnographic studies provide insight into the behavioural components that are difficult at best to reconstruct from archaeological sources, and Nielsen's research, for example, provides excellent examples.

If we come back to the definition of caravans and caravanning – a lifeways focused upon moving goods over long distances with beasts of burden – additional models can provide insight into the entirety of a caravan journey: the planning, the participants, the goods moved (these are generally invisible on the journey because they are end-point goods), the activities en route, the rest stops, etc.

I explore here the dynamics, evolution, and history of the "cat (caterpillar) freight sleighs" of northern Canada, a short-lived but key system of long distance trade that traversed through arduous geography, required the used of pack animals, was the only means of movement of goods exotic and basic to the settlements visited, and which comprised the focus of lifeways for the people – many related by kin - who engaged in the trade. First-hand accounts and recollections by descendants of cat train operations provide a unique view into the thinkscape of the people who engage in long-distance trade, with the aim to provide insight into reconstructions of ancient caravanning.

Caterpillar Freight Trains of Northern Canada
A Brief Background

The northern portions of the Canadian provinces of Alberta, Saskatchewan, Manitoba, and Ontario (west to east) are the homelands of Cree, Ojibway, and other indigenous peoples. The southern and central areas of these provinces had been settled by horticultural peoples (Siouan and others) who made use of the rich soils, and these were some of the first lands occupied by European settlers. To the north, the soils of the boreal forest and muskeg were inadequate for farming, but were penetrated by European traders and voyageurs who made use of the routes familiar to the indigenes, adapting the indigenous transportation practices by canoe and snowshoe to bring out the furs that made the Hudson's Bay Company (founded 1670) and Northwest Company (1779-1821, thereafter consolidated with HBC) rich. By the early- to mid-1800s, a change in fashion preferences in Europe caused the market for furs to drop, accompanied by an expanding market for lumber, which signalled the beginning of railroad construction throughout the county. The discovery of gold and other valuable ores in northern Canada beginning in the 1930s, plus the concomitant need for massive hydroelectric power generators, brought additional rail lines to service these regions, but the vast regions of muskeg – marshlands of the boreal forest – made it impossible to construct rail lines in these northern regions. Enterprising entrepreneurs[1] hauled goods into and out of the camps with teams of horses hitched to wooden sleighs when the muskeg was frozen and the ice was thick enough to support the weight of the loads; one example refers to 150 lbs (68 kg) per sleigh, for a total of 10,200 lbs (4762 kg) (Memories of Deep River: Freight Swing Era http://www.jkcc.com/brfreight.html). As gasoline-powered vehicles made their way into the

[1] I have made extensive use of several first- and second-hand accounts of this remarkable stage of commerce in the Canadian northern Prairie provinces. I have benefitted enormously from the recollections of the Johnson Transport Company by Pat Johnson, a grandson of the founder of the company, Hiram Johnson. Johnson Transport operated out of Clearwater and Ilford, Manitoba prior to and beyond the end of the short-lived cat freighting epoch of the late 1930s into the mid 1940s. Portions of the journal of Marvin Huffaker dating from 1930-1944 detail routine and specific events while Huffaker was stationed in Island Falls, Saskatchewan as an electrical engineer for the Hudson Bay Mining and Smelting Company operations just over the border in Manitoba (Huffaker 2002). Deep River, Saskatchewan, is situated approximately 350 km west of and at approximately the same latitude as Island Falls. It was the location of a fur farm begun in 1925, and the website documenting the history of the area includes numerous independently-authored first- and second-hand accounts for this time period that provide a rich cross-section of both Indigenous and European experiences related to transportation (Memories of Deep River n.d. http://www.jkcc.com/index.html).

more rural and remote areas, these replaced the horse teams. But, the dog sleds used by local Cree Indians remained an essential part of the transportation and communication system, and the Cree were renowned for their indefatigability, carrying repeated portage loads with a tump line, sometimes each load weighing 300 to 400 pounds (Huffaker 2002)[2].

A variety of gas-powered vehicles was adapted and invented in Canada for winter applications. Ford Model A vehicles were used at some of the northern camps, but the engine was not powerful enough to haul much, and the Model As were relegated to short runs around camp and on cleared routes on the winter ice (Huffaker 2002). The Linn tractor (1916-1952) proved to be an excellent solution for hauling the cargo loaded on sleighs across ice and frozen muskeg. Ski runners attached in the front allowed the rear axle-powered roller chain on a flexible track to move through snow efficiently. When additional tractors were added, the amount of load that could be carried was impressive: a Linn tractor train hauled a 120 ton load between Flin Flon and the depot (Theobald 2014)[3] . Each "cat-swing" was comprised of tractors and freight sleighs, followed up by a caboose where the crew ate and slept. A cat-train consisted of several cat-swings that travelled together.

The winter journeys required months of planning to ensure that all of the goods were ready and loaded when the ice was deemed thick enough. The collection points were located well outside of centralized cities. Although Winnipeg, Manitoba, was a major railroad centre of the Prairies at this time, the collection depots, like Ilford, Manitoba, lying 700 km north-northeast of Winnipeg and 300 km south-southwest of the port of Churchill on Hudson Bay (both as the crow flies; the on-ground travel reality is much longer), were situated as centrally as possible to the remote regions serviced. Outbound cat slings carried tinned goods, clothing, tools, replacement parts for the hydroelectric generators and mining camps, and dry goods, as well as some fresh foods and perishables as well, the latter of which were hauled in a heated trailer (Huffaker 2002). Return cat slings carried lumber, gold and other ores, fish, and furs. The arrival of a cat sling at a settlement – and the noise of the Linn tractors could be heard a long way and for a long time – brought out the community to purchase and barter for goods: meat, sugar, flour, tea, coffee, baking powder, salt, fuel, etc., plus household goods, tools, clothing, etc. The cat sling arrival was especially exciting for children, who got exotic treats like candy (personal communication, Pat Johnson 9II17). The cat slings also brought news and welcome social time, a break from the isolation and quiet of the distant settlements. The cat swings did not stop as frequently as the earlier horse-drawn sleighs, which required food and shelter for the crew and horses at the end of each day (Memories of Deep River [n.d.]: Freight Swing Era (http://www.jkcc.com/brfreight.html).

The Journey

[2] As a point of comparison, the current record for flour-packing at the Annual Trapper's Festival in The Pas, Manitoba, is 1000 lbs, set in 1972 by John Flett for a distance of x meters.

[3] This is possibly the same snow haul mentioned by Huffaker 2002; the depot is not specified, but it may have been Island Lake, a distance of 90 km.

The cat-trains travelled non-stop, with crews rotating every four hours. The ice needed to be two- to three-feet thick in order to sustain 200-300 tons of goods per sling (Huffaker 2002). In the Northwest Territories (NWT), a cat train run of 900 km from Grimshaw, Alberta to Yellowknife, NWT, was said to take about 40 days, a speed of 0 .9 km/hr (French 2016). The cat-train trip between Island Lake and Flin Flon (Manitoba) travelled an average of 9 km/hr on the 90 km trip, and at the height of winter, this meant about 7 hours of daylight. Lighter loads were not dependent upon the cat-trains, and mail and people moved regularly via dog teams driven by Cree and other Indians. If a Linn tractor had already cleared a route throught the snow, Island Falls residents outfitted a Ford Model A with skis on the front and "three wheels on each side on the rear axles with a chain running on these three wheels, with two of them as idlers and one as the driving wheel" to follow a Linn tractor (Huffaker 2002).

The winter journeys were replete with hazards. The temperatures often dipped to -55˚ C and below, and the drive-tractor was not heated. Pressure ridges up to three feet high on larger lakes necessitated chopping through them and laying timbers laid across the crack (Memories of Deep River [n.d.]: Post Freight http://www.jkcc.com/five.html). Occasionally the ice gave way beneath the loads – a terrible tragedy when horse trains were used, as they could not always be rescued (Memories of Deep River [n.d.]: Freighting http://www.jkcc.com/dlfreight.html). A very deep snow layer on the ice served to insulate the ice from fully freezing, and this required the crews to don snowshoes to tamp down the snow along the route. A pause of a couple of days and nights was usually sufficient for the ice to freeze deep enough to sustain the freight loads. When the cat-slings broke through the ice – which tended to be the most friable near lake edges – the entire crew was called out to assist.

The Linn crew carried 8" x 16" timbers 14 feet or 16 feet long on the first sleigh so if the tractor rear end broke through the ice and was held up by the front snow plow hanging on the remaining ice, they could stand these timbers upright in the water and ended on the lake bottom, with a timber across the top of them and a set of chain blocks, they could lift the tractor clear of the water and in a short time the open water would freeze over and then by draining the oil out of the Linn engine and replacing it with new hot oil, they could crank up and be on their way again" (Huffaker 2002).

Ice break-throughs did not always conveniently occur in shallow water. Jack Johnson's (son of Hi Johnson) job was to dive into dark slushy bogs to hook up sunken loads at depths of up to 80' (24 m) – an incomprehensibly frigid task. Some loads were just too heavy and deep to retrieve – like the load of gold lost en route from the God's Lake, MB, mine (Pat Johnson, personal communication 8II17).

Navigating a route through these remote regions depended upon accuracy – both for economy as well as for survival. To the outsider, the terrain appears to be an unbroken and indistinguishable view of rock and conifers. Huffaker noted that their Cree guides could "go out on any lake and steer a canoe in summer or a dog team in winter across the lake among islands for many miles in all kinds of weather and even in the dark of night and arrive at the portage across the lake and never miss even by a few feet" (Huffaker 2002). The huge and remote

stretches of terrain covered by Johnson Transport across muskeg, lake, river, and boreal forest each winter – much of it in darkness - required a relatively permanent and reliable means of marking the routes. The tallest visible conifer from a point on the trail was 'trimmed' of all the branches except for a cluster on the top (known as a "lobstick" and also used to mark portages at rapids [Memories of Deep River [n.d.]: Lost Land of the Caribou: Travel in the North http://www.jkcc.com/travel.html); this clearly highlighted the tree in the viewscape. Further along, the next high-point conifer was marked in a similar manner, creating a string of site-line markers. Considering that the cat slings ran full-time, the limited amount of daylight at that latitude, and the inability to rely upon full-moon clarity during all night journeys, the drivers needed to rely on more than the marked trees to guide them through the terrain – and this was an inherent or developped sense of route, critical to bringing the goods and crew safely through any journey.

The length of the transport season was dependent upon the weather in any particular year. An early freeze-up might mean extra trips to deliver and retrieve goods. In view of the unpredictability of the timing for the season, the people in the business of moving the goods via cat slings had to have their supplies warehoused and ready for the season to begin. The transporters stocked the goods ordered by community residents in the previous season, as well as the supplies required by mine operators; the transporters also had to understand the preferences of their consumers. For example, a supplier in Winnipeg attempted to have a transporter purchase a quantity of cloth that was available at a good price. The transporter said ":that the price might be good, but his customers would not want it or buy it – even with no other choice (Memories of Deep River n.d.). Huffaker refers to a heated caboose that submerged through the ice, flooding the supply of tinned goods within. The caboose was recovered and drained, but the labels came off of the tins. Purchasing tinned goods at the commissary that year was a guessing game because one never knew if they were buying beans or cherries (Huffaker 2002).

The tractor cat freight trains appeared in various locations in northern Alberta, Saskatchewan, Manitoba, and Ontario in the late 1930s, but were replaced by railroads and airplanes in the mid-1940s. There is little left to show for the remarkable and intensive cat freight train transport. The occasional abandoned sleigh or caboose, seemingly in the middle of nowhere, is one of the few reminders (Canadian Broadcasting Corporation 2015; French 2016); the wood from the sleighs was repurposed (Pat Johnson, personal communication, 8II17), which also accounts for the lack of material evidence of the cat slings.

The North: Canada and Chile

Several concurrences of dates, transport methods, navigation and trail-reconnaissance, and technological shifts are present between the historic Canadian cat-trains and Atacama Desert caravans. William Rudolph, a geographer who first visited the Atacama region in 1922 (Rudolph 1963:1), wrote of the enormous changes that had occurred since the geographer Isaiah Bowman (1923) had published his memorable monograph *Desert Trails of Atacama*:

Here [the puna] there are no changes to be noted over the fifty years since Isaiah Bowman's visits. Only in accessibility has the region been aided, through equipment which man has developed during this period. One is the four-wheel drive vehicle, which can negotiate the steep ascents to the high passes and can operate over the Puna's rugged terrains without need of roads. The other is the small airplane, for which the first landing field near the Salar de Laco was built a few years ago in the interest of minerals exploration (Rudolph 1963:9*).*

Andeans have relied upon long distance travel to move goods for thousands of years, and the llama was the sole pack animal native to the region. Although native to the highlands, llamas fare well from sea level to the high puna. Bonavia's (2008) exhaustive volume *The South American Camelids* notes cargo-bearing ranges up to 60 kg, although there is a general consensus of approximately 25-45 kg per llama, depending upon the length of the journey. Distances covered in a day have been stated to range up to 60 km, although a more conservative and widely acknowledged distance estimates range between 10-30 km per day (Bonavia 2008:416-423).

The unique geography of this region consists of a strip of coastal desert from which the Andes mountains rise and give way to the altiplano (elevations above ~3500 m asl), sometimes within a distance of less than 50 linear km. In northern Chile, predominated by the Atacama Desert and the solitary Río Loa that loops from the Andes to the Pacific, long distance transport was facilitated by movement between oases like Pica and San Pedro de Atacama, in addition to movements between the Pacific coast, the highlands, and the puna. The exceptionally dry climate and lack of resources for permanent settlement throughout this region has preserved innumerable caravan trails used first by llamas, and later by horses and donkeys in historic times. Many of these trails are disappearing under modern roads, expanding geological surveys throughout this mineral-rich region, and the exigencies wrought by modern tourism – but that is another story to be explored during this workshop.

Boom and bust of industry and transportation

Powered vehicles appeared in northern Chile in the early 20th c, accompanied by the expansion of roads that could be used by motor cars. Rudolph notes that cars were used to haul llareta (*Azorella yareta*), a flowering plant of the puna collected for fuel. As the llareta became scarce along the roadways, llamas were used to collect the plant from distant and vehicle-inaccessible areas and bring it to the roadways, until the availability of this slow-growing plant became too scarce to be viable. In the 1920s electric transmission lines and railroads were built throughout the north, often paralleled by roads (Rudolph 1963: 25). The nitrate industry of northern Chile necessitated enormous amounts of goods to be transported to and from the nitrate *oficinas*, and mules and horses were the preferred beasts of burden. The enormous wealth created by the nitrate industry came to a crashing halt in 1928 with the development of synthetic fertilizers, resulting in economic depression, political instability, and abandonment of the construction of a major railroad (Rudolph 1963:31). Economic fortunes shifted again with the discovery of the extent and quality of copper at Chuquicamata in the Andes, and the need for a railroad, particularly to move cattle and other goods from neighbouring Argentina, was

deemed essential. But, the steep terrain typical of Chuquicamata – and other copper mines subsequently discovered throughout the region – is not amenable to rail transport: trucks can negotiate the terrain far more efficiently and effectively (Rudolph 1963:35,73).

As roads and vehicles became the preferred means of travel in remote more areas, goods local to those remote settlements could be transported out to market, while imports like tea and sugar were transported in, along with construction materials for schools, homes, etc. (Rudolph 1963:60).

What we have here is a reorganization of the commercial life of a group of mountain communities widely dispersed but having well established relations and customs that have come down to the present almost from the time of the Conquest. With the first development of trade in South America, routes were discovered whose trade has become imbedded in the commercial life of the people to such an extent that when that trade is relocated it produces a shock upon every community involved. That shock the modern railroad has supplied. It is a matter not merely of romantic interest but also of great geographical importance to trace the old trade routes and to study the trade that passed over them. The more this is done the closer is seen to be the relation between the physical circumstances of a region and the life in it as it has been lived for centuries (Bowman 1924:292).

Yet, there remains a niche of transport that relies upon llamas, the beast that was the backbone of Andean society throughout time. Trucks can go where railroads can't, but llamas remain the kings of difficult terrain. For the Andean dweller, llamas have remain an affordable means of transport that tap into routes and social and kinship ties that have been cultivated for generations (see Browman 1990; Núñez 1976:197-198; Téllez and Silva 1989:48-49). Llamas have one more advantage – they can maneuver in and out of places unforgiving to horses and mules, and can be particularly desirable for the traffic that crosses international borders between Bolivia, Argentina, Peru and Chile to avoid the taxes and illegalities of banned goods, including the undocumented trade of camelids (llamas, alpacas, vicuñas). Lynch (1995:192) has noted similar back-and-forth transitions of use of transportation routes and their purposes from pre-Inca through post-Inca times in northern Chile.

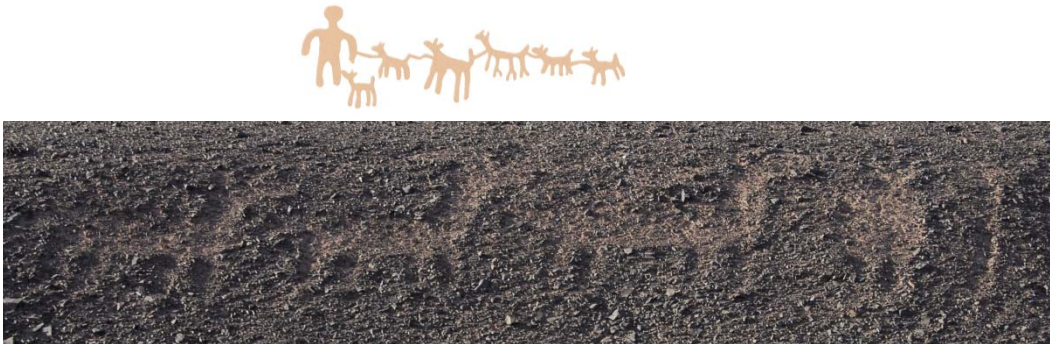
Closing Thoughts

In northern Chile, plans to lay railroad tracks were instigated by the boom of resources (e.g., llareta and copper) in remote regions, and concomitantly were halted or abandoned by the bust of the failure of those resources (llareta) or the inefficiency of transport. In northern Canada, investment in railroads hastened the end of cat freighting on winter roads that were the only reliable means of transport for all goods in and out. Railroads in these regions have had an irregular reliability: the vast and relatively level areas of permafrost over which the railbeds run are repeatedly subjected to heaving that damages the tracks and disrupts the rail service – an economic disaster where rail and air are the only means of year-round access. Maintenance is expensive, and inroads into solving the damage caused by heaving ground are slow to occur, particularly in consideration of the warmer winters that have been recorded

(Lambert 2013; Wei 2009). "Winter roads" remain a necessity within these regions, where full year supplies of goods are shipped in during the limited season when the routes – rail or vehicle – are firm enough to support the freighted goods. Winter roads remain a permanent fixture in the north: they are marked on road maps as such. An odd spin off of this "quaint" reliance on conditions beyond the control of humans is a popular North American reality television program "Ice Road Truckers" (2007-present), which chronicles trucks and truckers that transport freight during the brief season of late January to early April. Trucks that use the winter ice roads travel in groups for safety, similar to the formation of the cat slings into trains (Bray 2009). Ice Road Truckers has featured Manitoba winter roads for several seasons (Ice Road Truckers n.d.), with headquarters for the main trucking company located about 240 km from Ilford (62 km as the crow flies), where Johnson Transport centralized their shipping 75 years ago[4].

The cat freight trains thrived during the Great Depression, and in spite of the long hours in darkness, dangerous conditions exacerbated by bitterly cold temperature, broken ice, large carnivores (bears, wolves, etc.), and back-breaking work, there was never a shortage of men to work. What kind of person chooses to engage in this lifestyle, what were the motivations, and what were the rewards?

The mental resiliency and political savvy of the people who choose to make a living in distant and remote areas is one that is celebrated in history and myth. On the one hand, Hi Johnson,the founder of Johnson Transport in Manitoba was, by today's and yesterday's standards, a remarkable person who seemed to relish in negotiating the physical and social environment of remote regions of northern Canada. He raised his family within this environment, and lived to the generous age of 89; his descendants continue to thrive in the heart of the northern forests of Canada (The Pas Herald 1975). Are the tributes to the Andean caravanners of northern Chile to be found in the infrequent representations of a camelid train and their human etched in the hillside geoglyphs?



[4]Coincidentally, "Ice Road Truckers" featured a spin-off series "Ice Road Truckers" Deadliest Roads" which featured trucking breeding llamas across the Bolivian Salar de Uyuni in 2011.

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