

IN THE CORONER'S COURT
HOLDEN AT COBAR ON
1ST JUNE, 1982 BEFORE
MISS S. SCHREINER, S.M.

KEITH
INQUEST INTO THE DEATHS OF NORMAN ARMSTRONG,
MICHAEL^{JOHN} BOTTEN AND CHRISTOPHER^{PAUL} MCINERNEY
AND CIRCUMSTANCES OF A FIRE AT COBAR ON
12TH OCTOBER, 1980.

BENCH:

On Sunday, 12th October, 1980 Norman Armstrong, Michael Botten and Christopher McInerney died as the result of a fire in the No. 1 shaft of the C.S.A. Mine at Cobar. They were engaged in removing old concrete delivery pipes in the shaft, which had deteriorated and become a hazard. It was necessary for that job to be done on Sundays, because that shaft is an upcast ventilation shaft for the mine workings and when the powerful main fan on the surface is working, air is sucked through the mine workings up the shaft. It is not possible to work in No. 1 shaft with this fan on. Generally no work is carried out underground on weekends, and the main fan is turned off.

The men went down the shaft at about 8.25 a.m. Botten, the boiler-maker, apparently found some defect in the hoses and returned to the surface with them, presumably to replace them. Finn Ostergard, the shift boss, arrived at about 9.00 a.m. On No. 5 level plat, the crew then loaded every item they required (except the catcher which will be referred to later) into the cage and commenced work. Mr William Delbridge was the winder driver that day. His job was to raise and lower the cage at the direction of the crew as they were performing the work. The method of work was devised by Cyril Furner, the underground foreman. Mr. Ostergard stayed with the crew for one cycle of the removal of the pipes and then at about 11.00 a.m. at their request left them and went to the crib room on No. 5 level plat. He left the ventilation doors on No. 5 level open. At 12.10 p.m. the crew signalled to Delbridge that they were going to have a break; at 12.25 p.m. Armstrong spoke to Delbridge by phone from No. 5 level plat about speeding up the movements of the cage so that work could progress more quickly. At 12.50 p.m. Delbridge heard Armstrong say through the walkie talkie, "Jimmy up, up, up". Delbridge knew from the tone of Armstrong's voice that something was wrong and he hoisted the cage as quickly as possible. The time of ascent of the cage was calculated to be between 77 seconds and 2 minutes. The men were working about 80 ft. below No. 2 level, that is 680 ft. from the surface; the cage could travel at 17 ft. per second until about 170 ft. from the surface when it entered the regulation zone and travelled at 4.5 ft. per second; at 150 ft. below the landing it could then travel at less than 4.5 ft. per second to within 30 ft. of the landing when speed was reduced to less than 2.5 ft. per second for the last 30 ft. The walkie talkie went dead when the cage was at No. 2 level. When the cage was at about No. 1 level, Delbridge saw black smoke coming from the cap of the fan. The state of smoke and flame when the cage docked at the surface has been variously described by the eye-witnesses. I do not propose to refer to their descriptions in detail. Suffice it to say, the following descriptions were given: black smoke; fire coming from under the cage; a red smokeless flame going up about 15 ft; flames coming out of the fan cowling; flames coming out around the bottom of the cage and up over the top of the cage; flames enveloping the cage; a tree burning some distance from the fan bend; flames all around the cage. The fan was being driven by the heat and was heard by Mr. Humphries to go for about 10 minutes. A matter of minutes after the cage docked the chippy cage fell. Smoke was seen on No. 5 level by Ostergard. The fire was put out by means of water being sprayed down the shaft and onto the cage. The cage was transferred onto the ground by a crane. The evidence is that nothing inside the cage was moved during this manoeuvre. The position of the bodies of the deceased in the cage was described by a number of witnesses. Dr. Brody marked the positions of the bodies in the cage in exhibit 16 - across the body of McInerney he saw the acetylene bottle. It was his opinion that the deceased had assumed these positions in which they were found, before death, and I accept this opinion. I also accept that they were deliberately assumed positions.

Because there are no eye-witnesses as to what occurred, a number of theories have been advanced as to the cause of the fire. I allowed them to be fully explored because I felt it my duty to do so. Not only is it my duty as a Coroner to determine the identity, date and place of death, and manner and cause of death; and the date, place and circumstances of the fire (Section 22 Coroner's Act 1980) but as McClemens, J. said in Ex parte Minister of Justice; Re Malcolm; Re Inglis and Coroner's Act 1960-1963 1598 p. 1602, "Reading the Coroner's Act of 1960 as a whole it would seem to contain within itself a legislative intention not to limit the inquiries of coroners only to matters of mere formality but to require the findings of the coroner to be of social and statistical importance in a modern community." Also at p. 1602, his Honour quoted from Jervis on Coroners 9th ed. (1957) at p. 26 " If there has been any dereliction from duty, the facts are brought out into the open for all to judge; equally if the suspicions are unjustified, this can also be exposed and the persons cleared of unjustified suspicion. A properly conducted inquest has advantages in speed and cheapness over alternative judicial proceedings. In the case of deaths from industrial accident or disease the proceedings at an inquest can lead to measures being taken to prevent the recurrence of similar fatalities." I therefore felt it incumbent on me to provide an opportunity for the widows, the employer and unions representing the workers to fully ventilate all the relevant circumstances in order to try to prevent similar fatalities occurring. The ingredients of the tragedy were not unusual - it was reasonably expected by all that the men performing the work the deceased were doing, would come to no harm. Fires in a concrete mineshaft are practically unheard of - and despite the fire the week before, it was confidently expected by most at the mine that such a fire would not happen again. Yet it did, and the tragedy of the 12th October, 1980 occurred.

I am grateful to all who assisted in this inquiry - particularly Sgt. Alchin and Const. McCullough of Cobar Police, Sgt. Roy Sim, who tirelessly carried out investigations, and Sgt. Frank McGoldrick of the Police Prosecuting Branch who most ably assisted me. Each witness was thoroughly examined and cross examined by Counsel and parties appearing and I have thereby been greatly assisted in reaching the conclusions I have.

Before referring in more detail to the theories which have been advanced, I will outline briefly the circumstances as they existed in No. 1 shaft before the fatal fire on the 12th October, 1980. The sinking of the shaft was commenced in February, 1962. It is now 3,366 ft. deep. It is a circular concrete lined shaft and is 14 ft. in diameter. So far as is relevant here, each level is 300 ft. apart and there is a plat on No. 5 level. There are large ventilation doors on No. 5 level plat. The concrete which lines the shaft was discharged through 6" diameter pipe attached to the shaft wall, " ... steel pipe in 15 ft. lengths with flanged joints is fixed to steel brackets by clamps around the pipes which are bolted to the brackets. The brackets are in turn fixed to the concrete wall by studs screwed into nuts cast into the concrete at each pour. The brackets are 15 ft. apart and 5 ft. above the kerb ring of each pour. There are 2 concrete delivery pipes in the No. 1 shaft fixed side by side by a common bracket." (from exhibit 32). It was these pipes which the deceased were removing. Below about 100 ft. from the surface are kerb rings every 15 ft. These vary in width and depth being generally less than 10" high and about 1 ft. to 2 ft. deep and occurred as a necessary part of the construction of the concrete lining. In these kerb rings were old cement bags exposed to air to varying degrees. The walls of the shaft were coated with dust and deposits drawn up and deposited on the walls by the fan when air was sucked up. The shaft also contained four galvanised iron service pipes which were used to conduct diesel fuel, hydraulic oil & water & a spare. Vehicles and machinery were maintained and refuelled underground. In the shaft were also suspended 2 communication cables and an electric power cable also chippy guide ropes, 6" compressed air pipe, a disused rubber lined sand fill pipe extending to No. 3 level. There were tanks on No. 4 level and No. 6 level. The No. 4 level tanks were filled from the surface, and the No. 6 level tanks were filled by means of overflow of the No. 4 level tank. The cage used by the deceased was 5 ft. x 5 ft.6".

A cause for concern is the lack of proper records kept showing how much diesel fuel and hydraulic oil was sent underground. The fuel books (exhibits 61 and 189) were the only records kept. They were not instituted for the purpose of recording how much fuel and oil was sent underground - the mine management considered it was not necessary to have such a record. The only way the fuel man, or anyone else, had of ascertaining the amount of fuel and oil required was from the Shift Change Report, and there was no way of knowing accurately how much diesel fuel and hydraulic oil was sent underground, and whether all that was sent always totally arrived. I find the company's attitude towards this surprising, to say the least.

Another cause for concern is the evidence that the service pipes which were used for the delivery of diesel fuel and hydraulic oil, were never thoroughly and completely inspected. They had been in the shaft for many years, and notwithstanding the difficulty caused by the fact that they were coated by mine dust, I am of the view that they should have been regularly inspected for leaks. No-one seems to have considered this necessary.

The work done by the deceased had commenced on the 14th September, 1980 and was done on consecutive Sundays. It involved the use of oxy-acetylene equipment to cut holes in the pipes and to cut bolts holding the supporting brackets on to the wall so that the brackets could be removed. The system to be used was devised by Cyril Furner, the underground foreman, and it seems clear on the evidence that the deceased departed to some degree from the system laid down to be followed. I do not find it necessary to refer to this system in detail, nor to the extent to which the deceased departed from it.

In the course of cutting the pipes and bolts, parts of which were rusted and coated with mine dust, slag and sparks sprayed during the cutting process and pieces of hot nuts and bolts fell down the shaft.

On Sunday, 5th October, 1980 a fire occurred when Messrs. Douglas McLeod, Donald Stone and Kevin Olsen were engaged in doing the same work which the deceased were engaged in the following week. Greg Jackson was their shift boss. When they saw the fire, they called to go to the surface and by the time they got there, their evidence was that the cage was too hot to touch. Stone and McLeod were singed about the face and they were affected by smoke. It was reported to, and investigated by, the mine management and by the union representatives. Mr. Ian Thompson made an inspection on the 7th October, and could see nothing amiss, but Messrs. Humphries, Bishop and Jackson saw the pipes cleaned off 30 ft. above and 30 ft. below No. 2 level. From his investigations Mr. Thompson concluded that the fire was caused "by a hot nut and bolt from the oxy-acetylene cutting falling down the shaft and igniting an old cement bag in a kerb ring below the cage". He says he was not told of the cage being too hot to touch, or that the fire was the size of a miner's helmet. Mr. Jackson was of the view that the cause of the fire was "molten metal falling down the shaft ignited a mixture of fuel and hydraulic oil which coats the fuel lines in particular intervals of the shaft". He reported that view to Mr. Thompson who disagreed with it and ignored it. Mr. Thompson rang Mr. Graham Terrey, the Senior Inspector of Mines at Broken Hill, on the 7th October and reported the incident as a minor one - he reported only what in his view had occurred. There was no resident Mines Inspector at Cobar at the time. I note a resident Mines Inspector at Cobar has now been appointed and it is therefore not necessary for me to comment any further on this aspect. Mr. Terrey arranged for a Mines Inspector to visit Cobar but he fell ill, and as events turned out, there was no visit to Cobar by a Mines Inspector before the fatal fire. Mr. Terrey was dependent on what Mr. Thompson told him - he formed his judgement on what should be done on that alone. He says that if he had been told all the facts of the fire on the 5th October, he would have regarded it as more serious than he did and taken more appropriate steps. As a result of the fire of the 5th October some additions were made:- an additional fire extinguisher and self rescuers for all the crew were to be carried in the cage, a special "catcher" was made to catch hot nuts and bolts

and pieces of metal, a bucket of water was to be carried in the cage, and hot metal caught by the catcher was to be put into it. There is some doubt on the evident as to who actually made the catcher and what the specifications were. The deceased did not use it - they refused, saying the handle was too long and the cage was too crowded. When Mr Ostergard pointed out the handle could be cut to a suitable length, they said they would use the bucket.

In the light of what occurred on the 12th October and what has been discovered as the result of careful investigation, and with the gift of hindsight, it would be easy to condemn the actions, or more particularly the inaction particularly of Mr. Ian Thompson, the registered Mine Manager responsible for the matters of safety, and Mr. G. Terrey, the Senior Mines Inspector as cavalier and negligent in the extreme. However, I am of the view that with the knowledge that each of them had at the time, particularly Mr. Terrey, their actions were not unreasonable. No criticism attaches to Mr. Terrey when one considers the information given to him by Mr. Thompson, and the fact that he was stationed at Broken Hill and was responsible for a huge area. I am satisfied that, although there was much evidence during the hearing from many witnesses of diesel fuel and hydraulic oil spills and leaks in the shaft over a number of years, leading to the conclusion that there was a great deal of diesel fuel and hydraulic oil on the walls of the shaft, no one had informed Mr. Thompson or anyone from the mine management (except perhaps Cyril Furner) or the check inspectors or any of the union representatives, or the mines inspectors.

I am of the view that no one, perhaps with the exception of Mr. McDonald, before the tragedy of the 12th October thought that there was any danger in No. 1 shaft. There was evidence of many complaints by the men about No. 1 shaft and many work stoppages over conditions in the shaft, but none related to the presence of oil or concern over safety.

Nevertheless, it can properly be said in my view, that the consideration by Mr. Thompson of the cause of the fire on 5th October was extremely cursory.

Now to turn to the two main theories as to the cause and circumstances of the fatal fire on the 12th October, 1980. I do not propose to analyse them. It is unnecessary for me to do so, as this was done very vigorously and competently in cross examination of each witness who put forward a theory. To generalise, it was contended by mine management personnel, namely Messrs. Thompson, Price, Palmer and Matters that the major fire, and the fire which caused the deaths and damage in the shaft, originated in the cage and was only in the cage - there never was a fire involving the walls of the shaft; that the fire in the cage was started either by malfunction in the oxy-acetylene equipment, and/or the negligence of the deceased. They concede there was a fire below the cage at some stage because of the damage that is evident, but they maintain that this fire was separate from, and not causally connected with the major fire, and that it was a very minor fire. The proponents of this theory point to the lack of uniformity in the damage in the shaft, and the fact that hydrocarbons were found in the samples taken from the shaft after the fire, as proving this theory. They maintain that the lack of uniformity in the damage in the shaft was due to the fact that the only heat source was the cage, which was moving at speed, and the degree of damage can be correlated to the speed of the cage - the slower the speed, the greater the damage. They also maintain that if the walls of the shaft had been involved in a major fire, there would be no hydrocarbons remaining afterwards, such as were found. They further maintain that acetylene was the sole fuel for the fire and it provided sufficient fuel to cause all the damage - if there was a fire on the walls of the shaft then they would have expected that greater damage would have been done.

The opposing theory is that the major fire was on the walls of the shaft - it was caused by hot metal or slag or sparks falling from the oxy cutting operation and igniting a cement bag in a kerb ring below. This fire in the kerb ring vapourised the hydrocarbons which were plentifully dispersed on the walls of the shaft; this caused a huge fire to develop which engulfed the cage, incinerated the men and caused the fusible plugs on the oxygen and acetylene cylinders to vent, but not until the cage had neared the surface; that there was insufficient energy in the acetylene cylinder to do the damage seen in the shaft; that it is a known and observed phenomenon of fire that it does not always burn evenly and uniformly; that one reason for the lack of uniformity was the variation in the availability of hydrocarbons some being more thickly coated and being unevenly distributed; that the fire vapourised the hydrocarbons on or close to the surface of the mine dust only; that the fusible plugs had not vented at the time Mr Armstrong called to Mr Delbridge because if they had, the noise would have been very great and either drowned out Mr Armstrong's voice completely or Mr Delbridge would have heard the roar; that the fusible plugs on the acetylene and oxygen cylinders vented when the cage was closer to the surface because the severe damage caused at the top of the shaft is more consistent with this together with a fierce fire in the shaft.

There is a dispute in the evidence as to the effect of the opening or closing of the ventilation doors on No. 5 level plat - some witnesses are of the view that whether or not they were open or closed would make a significant difference to the air flow in the shaft and therefore to the fire; others disagree. It may be significant that the evidence indicates that those doors were closed on the 5th October but each half open on the 12th October.

I accept the evidence of Dr. Hobbs that his analysis of the samples taken from the shaft shows that there were hydrocarbons in the shaft. The extent of the presence of hydrocarbons is unclear from the evidence - the mine management witnesses gave evidence of one or two minor leaks, certainly nothing of any consequence; the employees spoke of numerous large leaks that were not fixed for weeks, spills and overflows of oil into the shaft; of oil or oily water falling on them as they travelled and worked in the shaft. Perhaps the reality lies somewhere in between those extremes. As I have said, there is no evidence that any of the employees told anyone in the mine management of the presence of oil in the shaft, with the exception of Mr Cyril Furner, the underground foreman, who sadly died and whose evidence I did not have the benefit of hearing.

There was much discussion about the catcher, to which I have referred. The deceased refused to use it.

Some witnesses have contended that in their view, if the deceased had used the catcher, after cutting the handle to the correct length, the fire would not have occurred; others say that in their view the catcher if used would have been inadequate to catch all the hot material; i.e. metal, slag, and sparks; was impossible to manoeuvre properly; was made of aluminium and unsuitable to hold hot metal; and was generally useless. In my view the evidence discloses that the catcher would not be capable of catching hot sparks, which would spray when the cutting was being done, - it was not designed for the purpose, - and it would have been extremely difficult (if not impossible) to manoeuvre between the pipes so as to catch all the falling metal as it was being cut. In my view the catcher was impractical.

In my view the fire was caused when hot metal, be it either slag or sparks or hot nuts or bolts fell down the shaft and ignited old cement bags in a kerb ring below where the men were working. That fire vapourised hydrocarbons on the wall of the shaft; the fire grew, fuelled by plentiful hydrocarbons on

the wall of the shaft; it enveloped the cage and burnt the contents and the deceased; the fusible plugs on the oxygen and acetylene cylinders vented when the cage was near the surface and continued venting after it had docked. There is no evidence to suggest that the oxygen and acetylene equipment was faulty.

I do not accept the theory that the fire was only in the cage and that the cage was the only heat source in the shaft. I accept the evidence of Mr. Butt, Mr. McMahon and Mr. Terrey. I accept that there had been a number of leaks in the fuel and hydraulic lines and overflow from the sumps which resulted in a presence of hydrocarbons on the walls of the shaft. It is to be remembered that this was a ventilation shaft and therefore leaks of substances lower down would be drawn up the shaft by the fan and would adhere to the walls.

The service pipes, including the fuel and hydraulic pipes have been rendered unusable by the fire and therefore it is not necessary for me to comment further on their use in this shaft.

In my view the system of recording the amounts of diesel fuel and hydraulic oil sent underground was totally inadequate. If hydrocarbons are sent underground a full and proper record of amounts and delivery times should be kept.

This tragedy shows the dangers caused by sending fuel and oil underground by means of pipes in a shaft used for other purposes. The difficulty of detecting leaks is a major one. Even if the recording of amounts of fuel sent underground had been accurate, it is unlikely that the volume of every spill and leak could be completely measured; the detection of leaks is extremely difficult and some delay may necessarily occur until those discovered are fixed. It appears from the evidence that this method of delivering fuel underground is unsatisfactory. Other methods could be used such as sinking a bore hole to contain only the fuel lines, these being insulated; or the decline system where all machinery is filled and maintained on the surface and no fuel or oil is sent underground. It seems these systems are to be preferred as they eliminate the risk of hydrocarbons entering the shaft.

There are still pipes in the shaft which have to be removed. Since the fatal fire, safety precautions were introduced by Mr. G. Terrey, Mines Inspector. There is nothing to indicate whether these precautions will be followed. In view of the findings of Dr. Hobbs of hydrocarbons in the samples obtained from the kerb rings after the shaft was washed down in 1981, I would recommend that before any more oxy cutting is done in the shaft, the walls should be scrubbed down and the kerb rings cleaned out and then filled with concrete to counteract any further seepage into the shaft which may be occurring. Immediately before any cutting with oxy-acetylene equipment the surrounding area should be hosed down with water and this should be repeated during the cutting operation.

I am of the view that the evidence discloses that the Check Inspectors, who carry a great responsibility in relation to matters of safety, are hampered by the fact that their work and that of their crew, is interrupted if they are called upon to consider questions of safety as they arise. They are then placed in the difficult situation of having to balance their duties as a Check Inspector against causing loss of income to their fellow crew members and themselves. This could be overcome by giving them time off duty to enable them to fully carry out the responsibility they have, and compensating them adequately.

It appears from the evidence that Mr. Ian Thompson, the registered mine manager, did not have full control - Mr. Palmer, the General Manager Operations, described himself as "wearing the stripes" and winning any argument with Mr. Thompson. One can appreciate the difficulties involved in running a large mine, but there is no warrant in the Mines Inspection Act (1901) for the division of responsibility as described by Mr. Palmer and other mine management personnel. I note the contents of the correspondence (exhibit 248) between Cobar Mines Proprietary Limited and the Chief Inspector of Mines in 1963 and 1964 in which the request by Cobar Mines for the appointment of three Registered Managers of Cobar Mines Pty. Ltd. was refused by the then Chief Inspector of Mines. Perhaps consideration should be given to amending the Mines Inspection Act to provide for delegation of responsibility by the manager (Section 5(1)) or for the appointment of more than one manager in a mine.

I do not propose to make any formal recommendations, but I shall refer the papers to the relevant Ministers for their consideration.

CORONERS ACT, 1960 1980

INQUEST BEFORE CORONER SITTING ALONE

New South Wales, }
To Wit. } COBAR

INQUEST held at the Court House
at COBAR in the State of New South Wales,
Between the 6th day(s) of April 19 81
on the 28th day(s) of January, 19 82
before me Susanne Elizabeth SCURTIMER one of
the Coroners of Our Sovereign Lady the Queen for the State aforesaid concerning the
death of Norman Keith ARMSTRONG
hereinafter called the deceased.

And I, as such Coroner, being charged to inquire (on the part of Our said Lady
the Queen) when and where the deceased came to his death and the manner and cause
of his death, and having made such inquiry, declare and find that the deceased on the
* 28th day of OCTOBER, 19 80,
at † No: 1 shaft at the U.S.A. Mine at Cobarr
in the COBAR Police District,
in the said State‡

* Insert date
and
† place of
death,
and
‡ finding.

DIED OF ALL MEMBERS OF COBAR INVESTIGATION
OF HIS BODILY BODY WHEN A STRIKE OCCURRED
IN THAT SHAFT WHILE HE WAS WORKING IN IT.

GIVEN under my Hand and Seal at COBAR this 1st
day of June, 19 .

[Signature]
Coroner



CORONERS ACT, 1960 1980

INQUEST BEFORE CORONER SITTING ALONE

New South Wales, } COBAR
To Wit. }

INQUEST held at the Court House

at Cobar in the State of New South Wales,

Between 6th day(s) of April, 19 81,
and the 28th day(s) of January, 19 82,

before me Susanne Elizabeth SCHREINER one of
the Coroners of Our Sovereign Lady the Queen for the State aforesaid concerning the
death of Christopher Paul McINERNEY

hereinafter called the deceased.

And I, as such Coroner, being charged to inquire (on the part of Our said Lady
the Queen) when and where the deceased came to h is death and the manner and cause
of h is death, and having made such inquiry, declare and find that the deceased on the

* Insert date
and
† place of
death,
and
‡ finding.

* TWELFTH day of OCTOBER, 19 80,

at † No: 1 Shaft at the C.S.A. Mine Cobar

in the Cobar Police District,

in the said State‡

DIED OF THE EFFECTS OF GROSS INCINERATION
OF THE TOTAL BODY WHEN A FIRE OCCURRED IN
THAT SHAFT WHILE HE WAS WORKING IN IT.

GIVEN under my Hand and Seal at COBAR this 1st

day of June, 19 82

(S.E.Schreiner)

Coroner

mw...



CORONERS ACT, 1950 1980

INQUEST BEFORE CORONER SITTING ALONE

New South Wales, } COBAR
To Wit. }

INQUEST held at the Court House
at COBAR in the State of New South Wales,
Between 6th April 81
and 28th day(s) of January, 19 82
before me Susanne Elizabeth SCHREINER one of
the Coroners of Our Sovereign Lady the Queen for the State aforesaid concerning the
death of Michael John BOTTEN
hereinafter called the deceased.

And I, as such Coroner, being charged to inquire (on the part of Our said Lady
the Queen) when and where the deceased came to his death and the manner and cause
of his death, and having made such inquiry, declare and find that the deceased on the
* TWELFTH day of OCTOBER, 19 80,
at † No: 1 Shaft at the C.S.A. Mine at Cobar
in the Cobar Police District,
in the said State‡

* Insert date
and
† place of
death,
and
‡ finding.

DIED OF THE EFFECTS OF GROSS INCINERATION OF
THE TOTAL BODY WHEN A FIRE OCCURRED IN
THAT SHAFT WHILE HE WAS WORKING IN IT.

GIVEN under my Hand and Seal at COBAR this 1st
day of June, 19 82.

(S.E.Schreiner)
Coroner



mw...