

To: XXXXXX
XXXXX
Melbourne

In confidence

Some data has been deleted from this draught copy file as it pertains to other clients

Good morning xxxx

I have been collating information regarding the success of Aviation Awareness Safety Courses to try and put a perspective on the accident rate. Tangible, realistic figures to support what the industry already knows - that course participants have a lower accident rate and therefore more productive business - has been difficult to find as there are no factual databases readily available. CASA is unable to supply data for some of the years, leaving BASI as our best source - however industry habit of poor record keeping and not reporting accidents where no injury was sustained as well as the "stab in the dark" approach to completing Commonwealth Statistics Forms, means that this data would need to be expolated in a real world direction. Our records show a large number of course participants representing a cross section of the Pilot community, however, resistance to the course from the larger operators eg, XXXXXX, XXXXX Helicopters, XXXXXX Mustering Co, XXXXX Helicopters, XXXXX etc, still leaves numbers of mainstream Pilots out of the actual data but included in the overall "picture".

This research, coupled with many recent accidents involving non course participants in Queensland, show the industry success story that can evolve from continuous bi-annual (minimum) Safety Awareness training and insurance company incentives. As you may recall, a popular new type of aircraft, booming commercial pressures, a lack of "street wise" training and an highly experienced industry that "knew it all" led to a huge increase in accidents when the Robinson R22 Helicopter was introduced into this country. (Sounds like the Ag Industry!)

BASI s database is uncollated in that it will give reported Helicopter accidents per year as well as accident rates (the ratio of accidents per 100,000 hours flown) but doesn t relate the two in enough detail. For example, in 1981 there may have been four R22 s on the register with one reported accident. If the hours flown by those machines that year totaled 4,000, then the accident rate for the year would be 25 : 100,000. Other expressions of this could be "25% of the fleet crashed that year" or "1 in 4". With all the above in mind and the actual numbers of machines in the country per year not actually known, it is hard to get accurate figures.

Our collation of BASI reports "Australian Helicopter Accidents 1969 - 1988" and "97 data" gives the following data: (you should increase it by at least 30% to get the real picture):

INDUSTRY ACCIDENTS 1981 - 1988:

1981	1982	1983	1984	1985	1986	1987	1988
28	27	31	31	36	38	35	46

ROBINSON R22:

1981	1982	1983	1984	1985	1986	1987	1988
1	2	1	8	9	4	3	13

R22 AS A PERCENTAGE OF INDUSTRY ACCIDENTS:

1981	1982	1983	1984	1985	1986	1987	1988
3.6%	7.4%	3.3%	26%	25%	10.5%	8.5%	28%

HUGHES:

1981	1982	1983	1984	1985	1986	1987	1988
36%	33.3%	32.2%	13%	22.2%	32.15%	28%	20.5%

BELL (ALL TYPES)

1981	1982	1983	1984	1985	1986	1987	1988
39%	51.8%	32%	29%	38.8%	34%	40%	39.1%

R22, REGISTERED, AS A PERCENTAGE OF THE TOTAL FLEET. _____.

1981 - 1990 - not known .

What is known from BASI data is that the fleet accident rate varied greatly, probably as helicopters were new to Commercial activities - especially mustering - and mechanical failures were common in early years.

FLEET ACCIDENT RATE PER 100,000 HRS. _____

1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
36	35	28	13	14	24	25	15	19	45	42	37	25

1981 - 1987 Remained stable at an average of 20.9. No data is currently available to us for the accident rate over the last 10 years. (1988 - 1997)

The figures (to 1987) show the fact that there were only a few R22 machines on the Australian register. The major influx was in 1987 on, till today s total of approx 230 (32% of the total Australian fleet.)

INDUSTRY ACCIDENTS 1989 - 1996

INDUSTRY (all helicopters):

1989	1990	1991	1992	1993	1994	1995	1996
55	57	56	50	48	39	33	33

ROBINSON R22 PERCENTAGE OF ACCIDENTS:

1989	1990	1991	1992	1993	1994	1995	1996
31%	42%	35.7%	40%	35.4%	43.5%	39.4%	36.4%

HUGHES % of accidents

1989	1990	1991	1992	1993	1994	1995	1996
20%	21%	16%	24%	14.5%	12.8%	24.2%	21.2%

BELL (ALL TYPES) % of accidents

1989	1990	1991	1992	1993	1994	1995	1996
32.7%	24.5%	28.5%	26%	37.5%	25.6%	33.3%	30.3%

The problem with fleet percentages figures is that really accurate fleet numbers have not been taken into account. For the R22, an average of 230 aircraft (32%) is assumed of the total of Australian Fleet averaging 720 aircraft from 1990 - 1996. However the accuracy is such that the results would only differ by a few points.

Exploring these figures shows an average of one R22 accident reported every 2.8 weeks over the whole period 1990 - 1996. Our opinion is that the "real world" figure is one accident every 2.0 weeks (remember the min 30% accidents not officially reported due no injuries and other factors).

At this date (16 May 1997) there are 3,504 Helicopter Pilot licences in the CASA data base, 2,555 with valid medicals, 2,042 rated on the R22 and 108 rated on the R44.

The introduction of an R22 Safety Awareness program in mid 1993 had the following effect on a snowballing group of participants.

- (1) 1993 - 1996 - 600 participants including 30 guest lecturers (AAIG, BASI etc).
- (2) Course participants accidents known to us 1993 - 1996:
 - XXXXXX - no injuries - PVT Pilot - NSW - - carrying out pig shoot ups (not insured)
 - XXXXXXX - killed (2) - CPL - Qld - wire strike (2 accidents)
 - XXXXXXX - killed (1) - CPL - Qld - wire strike (XXXX Helicopters)
 - XXXXXXXX - killed (2) - CPL - Qld - muster ops
 - XXXXXX - CPL - Qld - Ag ops - wire strike
 - XXXXXXX - CPL - NT muster ops - hit tail rotor on bull
 - XXXXXXX - CPL - Qld - maintenance error - no apparant times on maintenance release
 - XXXXXXX - CPL - Qld - wire strike (serious injuries)

XXXXXXX- CPL - WA - hit tail rotor on bull
XXXXXXX - CPL - Qld - water in fuel (AAIG insurance claim)
XXXXXXX - CPL - WA -restricted cyclic due esky (AAIG insurance claim)
XXXXXXXXX - CPL - NT - tail boom damage - windy conditions

There may be more that you know of or that have not been reported to us.

It is hard to collate the above with the remainder of the industry, even if you work through further statistics. For example, of the approx 600 participants to the end of '96 - some attended courses 2 or three times due insurance recency requirements. Others fly turbines in PNG and attended out of curiosity.

It is fair to say that a total of 500 participants were R22 Rated Pilots - ranging from student pilots to highly experienced long term industry professionals. Therefore the CASA data base figures show that 1,500 R22 Pilots have NOT attended the CSIT course.

With these 500 participants, 240 R22 s and 1,500 pilots who have not attended the course, we may find it difficult to compare accident rates overall due to variables, such as industry representation and a myriad of others.

R22 ACCIDENT RATES AAIG

Average accident rate (percentage) = data deleted - AAIG only

RATE PER 100,000 FLY HOURS AT AN ASSUMED AVERAGE deleted EACH PER YEAR.

xxxxdata deleted - AAIG only

If the Industry aerial work average was still assumed to remain at 20.9, course participants insuring through AAIG have reduced their accident rate by at least 66%.

As I believe that the flow on effect of the course does effect the remainder of the industry through positive or negative discussion and peer pressure, even an industry wide reduction to 15:100,000 would still shows a 50% improvement for AAIG course participants.

Best regards

XXXXX