

**SCORING GUIDE FOR RISK MATRIX  
2000.9/SVC**

David Thornton, Ph.D.

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## **1. Introduction**

Risk Matrix 2000 (RM2000) is a statistically-derived risk classification process intended for males aged at least 18 who have been convicted of a sex offence. At least one of these sexual offences should have been committed after the age of 16. It uses simple factual information about offenders' past history to divide them into categories that differ substantially in their rates of reconviction for sexual or other violent offences. Risk Matrix was developed for use in the United Kingdom. While it is likely to be applicable in other jurisdictions, its scoring rules were tailored to specific features of criminal justice systems prevailing in the United Kingdom.

Risk Matrix 2000 consists of 3 scales. RM2000/S is a prediction scale for sexual offending. RM2000/V is a prediction scale for non-sexual violence engaged in by sex offenders. RM2000/C is a combination of the first two scales and predicts sexual or other violence.

RM2000/V has also been tested with adult males serving a prison sentence following conviction for an offence of non-sexual violence and with a heterogeneous group of prisoners who were participating in cognitive skills programmes. It is therefore reasonable to use it with adult males who have been sentenced for serious non-sexual violence. The risk categories will define groups that differ in relative risk of reconviction for non-sexual violence. Note that specific recidivism estimates are not presently attached to risk categories when the scale is used with this group. However, it would be reasonable to use RM2000/V to identify a subgroup of violent offenders who should be provided with additional services to try to manage their risk.

When used with sexual offenders, the tables to be found later in this guide show rates of reconviction for various kinds of offence in relation to RM2000 categories. Although the risk categories can be interpreted in an actuarial way as indicating long term risk of reconviction, it should be remembered that (a) the reconviction rates shown were derived from specific samples, and are therefore subject to sampling error; (b) reconviction rates may vary from one jurisdiction to another, and over time, depending on the behaviour of the police and the courts; and (c) reconviction is at best a lower-bound estimate of rates of re-offending.

It is hard to be sure of the size of the gap between reconviction rates and re-offence rates. Estimating the real recidivism rate depends on combining a model of the offence process (the rate at which re-offenders commit further offences) with a model of the process that leads from offences to conviction (the probability of detection for a given rate of re-offending). Section 11 shows both observed recidivism rates and estimated real re-offence rates. The reader is warned, however, that the process of estimating true re-offence rates depends on the accuracy of the assumptions plugged into the model.

RM2000 is not intended for use in making decisions about family re-integration where the task is to distinguish at very low levels of risk, and to consider risk that may be very situation specific. It is sensibly used to distinguish a group of offenders who collectively present a relatively higher risk to the community from among the broad range of offenders serving community or prison sentences.

## **2. How to use the Scoring Guide**

If you are a researcher, you can find brief details of the construction and testing of Risk Matrix 2000 in sections 4 to 8. A longer and more academic account may be found in Thornton, Mann, Webster, Blud, Travers, Friendship and Erikson (2003).

If you are reading this guide because you wish to score the Risk Matrix 2000 scales then you may wish to skip over sections 4 to 8. You should read section 1 (noting who Risk Matrix 2000 should be used with), and sections 9 onwards. Once you are familiar with the Manual, when you actually score an offender on Risk Matrix 2000, you will want to move between the Scoring Form and the Item Definitions in section 12. When you have completed scoring you may wish to review sections 16 and 17 if you are writing a risk assessment report.

## **3. Responsibility for the Appropriate Use of the Scoring Guide**

While the information contained in this scoring guide has been provided in good faith, responsibility for determining the appropriate application of Risk Matrix 2000 to any particular individual lies entirely with the user and the user's organization. In particular it is important to recognize that decisions about individuals should be based on the relevant legal, policy, professional, organizational and clinical frameworks, taking into account all the available

information about the individual concerned including their living circumstances.

#### **4. Origins of Risk Matrix 2000**

Risk Matrix 2000 (RM2000) was developed from an earlier framework for assessing the risk posed by sex offenders. Structured Anchored Clinical Judgement (SACJ) was widely employed by prison, police, and probation services in the United Kingdom during the 1990s. The framework was never formally published but descriptions of it may be found in Grubin (1998) and Hanson & Thornton (2000).

SACJ was a multi-step process. The first step was based on cross-tabulations and regression analysis of ten-year sexual reconviction rates observed for male sex offenders released from prison in 1980 (Thornton & Travers, 1991). The second step, referred to as Aggravating Factors, consisted of other factors that were identified in a literature review as predictive of sexual offending. The principle used in the review was that a factor had to have been found to be significantly correlated with sexual reconviction in at least two studies.

Some of the Aggravating Factors involved complex clinical assessments and so were unavailable for many assessors. Consequently a reduced set of Aggravating Factors, consisting of those that were more easily available, was defined and the resulting scale was called SACJ-Min.

Items used in the first, actuarial part of SACJ-Min were as follows:

- Current Sex Offence?
- Prior Sex Offence?
- Current Non-Sexual Violence?
- Prior Non-Sexual Violence?
- Sentenced on More than Four Occasions for Any Offense?

The number of these items present was summarized into three risk categories (Low, Medium, and High).

The Aggravating Factors were as follows:

- Male victim?

- Stranger victim?
- Non-contact sex offence?
- Never Married?

Risk was then put up one category for each two Aggravating Factors present.

This scale was cross-validated in the four samples described in Hanson & Thornton. The ROC Area-Under-the-Curve (AUC) statistic for SACJ-Min was 0.69 for Rapists and 0.68 for Child-Molesters. That paper also described the development and cross-validation of a new scale – Static-99 – whose ROC AUC was 0.71 for Rapists and 0.72 for Child-Molesters in the same samples.

Development work for Static-99 was actually completed in 1999 (hence the name). From Hanson & Thornton's work it was apparent that Static-99 was a better predictor than SACJ-Min. However, Static-99 had a number of disadvantages, notably that it was harder and more time-consuming to score. It therefore seemed worth determining whether minor modifications of SACJ-Min could produce a scale that would be as predictive as Static-99 while still being easier to apply.

## **5. Development of RM2000/S**

Revision of SACJ-Min was completed in 2000. A number of factors were considered in this revision. These were:

- Evidence from the Hanson & Bussiere meta-analysis that Age was an important risk factor for sexual recidivism and ought therefore to be incorporated into the scale.
- It seemed likely that those with prior sexual offenses could be usefully differentiated according to the number of prior convictions. This would also increase the weight given to the sexual priors factor which seemed appropriate given that it had a higher average correlation with sexual recidivism in the meta-analysis than the other factors considered here.
- Police forces using the scale had expressed a need for the High risk category to be further differentiated to distinguish a smaller, very high-risk category.
- Sex offenders present equal risks for future sexual offending and future (non-sexual) violent offending. The correlates of violence only partly overlapped with the correlates of sexual offending. The inclusion of

violence items in the original SACJ-Min had been partly to increase its prediction of non-sexual violence. It was decided that it would be better to create separate predictors for sex offending and violent offending by sex offenders.

- Friendship et al (2001) had found that prior sentencing occasions, and the kinds of convictions at these occasions, were reliably available but that counts of convictions (of different kinds) were not. In the UK Sentencing occasions are also markedly easier to count than the complex mix of charges and convictions scored by RRASOR and Static-99.
- The concept of the index sex offense has caused considerable complications in scoring Static-99. It was decided to try to define all variables without reference to an index offense.

In the light of these considerations it was decided to start from a simple model that used just two variables: the number of sentencing occasions that included a conviction for a sex offense (called sexual appearances) and age on discharge. A construction data set was then obtained consisting of untreated sex offenders discharged from prisons in England and Wales in the early 1990s. A logistic regression model was fitted with just these two variables as predictors and then the value of the other factors in step one of SACJ-Min tested by determining whether adding them significantly improved prediction. The results of this analysis indicated that only the variable *More than Four Sentencing Occasions for Any Offense* (referred to as *Criminal Appearances*) added significantly.

Accordingly Step One of SACJ was modified so that it used three variables as follows.

- Number of Occasions Sentenced for a sex offense, differentiated into 4 levels.
- Number of Occasions Sentenced for Any Criminal Offense, differentiated into 2 levels
- Age on release, differentiated into three levels

These three variables were then combined so as to distinguish four levels of risk.

Step two, Aggravating Factors, was left as before.

## **6. Development of RM2000/V**

To construct a predictor for non-sexual violence amongst sex offenders, a similar initial model was started with two predictors, number of violent appearances and age on discharge. This model was fitted to the same construction sample but with reconvictions for non-sexual assault as the dependent variable. Then a large number of parameters representing the frequency of different kinds of offense were tested to see if they added predictive power. Of those tested, the variable “Any Burglaries?” emerged as adding most additional predictive power. After that variable was added, no other variable made a useful additional contribution.

On this basis a second, violence prediction, scale was defined using just these three variables, as follows:

- Age Differentiated into 4 levels
- Number of Occasions Sentenced for Non-Sexual Violence
- Ever Convicted for Burglary

This scale too was defined so as to yield four risk categories.

## **7. Development of RM2000/C**

Sex offenders present more or less equal risks for future sexual offending and for future non-sexual assault. The first two RM2000 scales were designed to assess these distinct kinds of risk separately. For many practical purposes, however, it is necessary to consider the combined risk of either of these kinds of re-offending since both would normally be considered serious re-offences.

Since the two scales are about equally effective in predicting the kind of offending that they are relevant to, and since each has only a much more limited ability to predict the other kind of offence, it seemed reasonable to combine them in a way that gave them equal weight.

RM2000/C achieves this by starting from the risk categories generated by the other two RM2000 scales and producing a new score that weights each of these components equally.

## **8. Testing RM2000**

By 2003 the predictive accuracy of RM2000 had been tested on various samples of adult males who were serving prison sentences in England and Wales following conviction for sex offences. Some of these samples were only followed up for a few years after release and used rather selected samples, for example, sex offenders who were assessed for treatment. In addition, however, one, large, national sample was followed for nearly 20 years.

The predictive accuracy of a scale is usually expressed in terms of a statistic called the ROC AUC coefficient. This can be interpreted as the proportion of randomly chosen Recidivist/Non-recidivist pairs in which the recidivist would score higher on the risk scale. This index runs from 0.5 (meaning no predictive value) to 1.0 (meaning perfect predictive value). Coefficients in the 0.7s would generally be thought of as indicating moderate predictive accuracy.

For each sample ROC AUC coefficients were calculated measuring the strength of the relationship between the scale and the relevant outcome. Table 1 shows the AUC coefficients, the sizes of the samples on which they were based, the length of the follow up, and the outcome criterion used.

It is important to note that all these results represent cross-validations of the scale.

**Table 1: Predictive Accuracy of RM2000 Scales**

Scale	Type of Reconviction	N	Follow Up (years)	AUC
S	Sexual	647	2	0.77
S	Sexual	429	16-19	0.75
V	Non-Sexual Violence	647	2	0.85
V	Non-Sexual Violence	311	10	0.78
V	Non-Sexual Violence	423	16-19	0.80
C	Sexual & Other Violence	276	Mean 3.7	0.81
C	Sexual & Other Violence	406	16-19	0.74

There have been a few additional studies of the predictive accuracy of the S-scale. The results of all the cross-validations to date have been summarized

by Hanson (2006) in a meta-analysis. Hanson uses a statistic called *d* as his index of predictive accuracy. This is a recognized alternative to the ROC AUC statistic. It expresses the difference between the mean score on the prediction scale of recidivists and non-recidivists in standard deviation units. The Table 2 shows the relative predictive accuracy of different scales according to this meta-analysis. It is clear from this table that RM2000/S's predictive accuracy is comparable to that of other actuarial instruments.

**Table 2: Average Predictive Accuracy of Actuarial Instruments (Sexual Recidivism)**

<b>Prediction Instrument</b>	<b>d (95% CI)</b>	<b>N (k)</b>
Static-99	.70 (.64-.76)	13,288 (42)
RRASOR	.59 (.52-.65)	8,673 (28)
Risk Matrix 2000/S	.82 (.68-.97)	1,814 (6)
Static-2002	.78 (.65-.91)	2,290 (5)
MnSOST-R	.72 (.58-.86)	1,684 (8)

It should be noted that most of the RM2000 studies are with UK samples while the majority of the studies with other instruments are from other jurisdictions.

## **9. Labelling Categories**

The RM2000 risk categories can usefully be thought of as ordinal groupings along the risk continuum with the higher numbered categories representing relatively higher levels of risk. For heuristic purposes it is useful to attach labels to these categories. The following scheme is proposed for the S and V scales (table 3).

**Table 3: Risk Category Labels for the S & V Scales**

<b>Risk Category</b>	<b>Category Label</b>
I	Low
II	Medium
III	High
IV	Very High

It is important to recognize that applying labels of this kind represents a value judgment that is relative to a practical purpose. In calling a risk “high” we are implying that it is sufficiently high to be worth worrying about, taking action, etc.

For the C-scale, scores from 0 to 6 are defined and labels are indicated in table 4.

**Table 4: Score Labels for the C-Scale**

<b>Score on C-Scale</b>	<b>Label</b>
0	Low
1	Medium
2	Medium
3	High
4	High
5	Very High
6	Very High

## **10. Norms for the Risk Matrix 2000 Scales**

Table 5 shows the percentage of offenders from the 1979 discharge sample (see section 10) in each RM2000 category.

**Table 5: Percentage Falling in RM2000 S & V Risk Categories**

<b>Risk Category</b>	<b>S-Scale</b>	<b>V-Scale</b>
I	20%	36%
II	39%	31%
III	28%	23%
IV	13%	11%

Table 6 shows the percentage falling at each RM2000/C score for the same sample.

**Table 6: Percentage Falling at each RM2000/C Score**

<b>Score</b>	<b>Percentage</b>
0	15%
1	14%
2	22%
3	20%
4	21%
5	7%
6	1%

Proportions falling at the different category and score levels will naturally vary from one jurisdiction to another and over time within jurisdictions. Additionally, sex offenders given community sentences may have different category/score distributions from those given prison sentences, and within a prison population, those sex offenders allocated to high security prisons will typically differ from those allocated to lower security levels. Accordingly, anyone using RM2000 may wish to establish norms for the particular context in which they work.

## **11. Recidivism Rates Associated with Risk Categories**

One of these samples was a national sample of adult males sentenced to prison in England and Wales for sex offences and released in 1979. They were followed for 16 years using central police records (Criminal Records Office) and for 19 years using a central statistical database, the Offender Index, that holds data from the courts. A man was counted as being sexually reconvicted if he was recorded as reconvicted according to either source. A man was counted as being reconvicted for non-sexual violence if he was shown as reconvicted for a non-sexual assault according to either source.

This sample is deemed to be the most useful for estimating recidivism since the sample is nationally representative rather than being specially selected, for example, for treatment. Further, since effective treatment programs were unknown in this correctional system at the time, they can be regarded as an untreated sample.

Table 7 shows 5, 10, and 15 year sexual reconviction rates broken down by RM2000/S categories. These intervals are shown as both CRO and OI data sources were available for each of them.

**Table 7: Sexual Reconviction Rates**

<b>RM2000/S Category</b>	<b>5 Year</b>	<b>10 Year</b>	<b>15 Year</b>
Low	3	6	7
Medium	13	16	19
High	26	31	36
Very High	50	55	59

Table 8 shows 5, 10, and 15 year rates of reconviction for non-sexual assault broken down by RM2000/V categories.

**Table 8: Rates of Reconviction for Non-Sexual Assault**

<b>RM2000/V Category</b>	<b>5 Year</b>	<b>10 Year</b>	<b>15 Year</b>
Low	4	5	5
Medium	12	14	19
High	27	34	39
Very High	47	57	59

Table 9 shows 5, 10, and 15 year rates of reconviction for sexual and other violent offenses broken down by RM2000/C categories.

**Table 9: Rates of Reconviction for Sexual or Other Assaults**

<b>RM2000/C</b>	<b>5 Year</b>	<b>10 Year</b>	<b>15 Year</b>
Low	7%	10%	10%
Medium	23%	30%	34%
High	41%	47%	54%
Very High	63%	72%	78%

These rates reflect the jurisdiction, the era in which these offenders were at risk, and the duration of the follow-up. Varying any of these parameters would likely lead to different reconviction rates. The clear-up rate for sexual offences has declined dramatically in the UK in recent years and so current reconviction rates might be expected to be lower even though there is no reason to suppose that the underlying rate of re-offending has changed.

Hanson, Thornton and Price (2003) considered how the underlying true re-offence rates might be estimated for the four risk categories defined by the S-scale. They determined that you could mathematically project true recidivism rates from observed rates if you knew the average number of persons victimized per year by those offenders who actually offended during the follow-up period and the probability of detection for each new victim. They carried out systematic reviews of the different sources of data available to estimate these parameters. They concluded that re-offenders would on average offend against a new victim every eighteen months and that the probability of detection was around 0.10 (i.e. on average for every 100 victims, there are 10 arrests). These figures are quite conservative in that they do not count some of the less serious sexual offences. This means that projections based on these assumptions will likely underestimate the real rate of recidivism to some degree.

Using the Hanson and Thornton equations, and these parameter estimates, alongside the observed recidivism rates shown in table 7, yields the estimated true recidivism rates shown in table 10. The methodology employed followed Thornton and Hanson (2003) in using the observed recidivism rates to estimate separately for each risk category

**Table 9: Projected True Rates of Sexual Recidivism by S-scale Risk Categories**

<b>RM2000/S</b>	<b>5 Year</b>	<b>15 Year</b>
Low	8%	11%
Medium	25%	29%
High	49%	55%
Very High	85%	91%

A number of points emerge from this table.

First, offenders in the Low risk category really do seem pretty unlikely to offend against new victims in the fifteen years after release. It should be noted though that this does not necessarily mean that they won't re-offend against an old victim (for example an incestuous father re-offending against his daughter after being returned to the family home).

Second, although a significant number of those in the Medium risk category re-offend, the majority (nearly three-quarters) do not offend against new victims.

Third, offenders in the High risk category offend against new victims at a much more substantial rate. It appears about half of them do so. For this group, a further assessment, attending to psychological risk factors (Thornton, 2002), would seem well warranted to refine the risk evaluation. Intensive treatment interventions aimed at moderating psychological risk factors seem a well justified strategy for this group.

Fourth, virtually all the offenders in the Very High risk category seem to re-offend within fifteen years and indeed most of them re-offend within the first five years of release. Active and pre-emptive risk management seems justified for this group. Although treatment interventions may reduce risk to some degree, with current treatment technology, it is clear that for these offenders a relatively high level of risk is likely to remain even after relatively successful participation in treatment.

The reader is warned that the above paragraphs combine information about projected true recidivism rates with value judgments regarding the seriousness of sexual offences and about the level of risk it is reasonable to expect communities to accept.

## **12. Item Definitions for RM2000**

This section provides guidance on how to score each of the items used in the Risk Matrix 2000 scales. Instructions on how to combine them are given in the next section. For ease of use each item is given its own page.

Items are described in the following order.

- Age at Commencement of Risk
- Sexual Appearances
- Criminal Appearances
- Sexual Offenses against a Male
- Sexual Offenses against a Stranger
- Single
- Non-contact Sex Offense
- Violent Appearances
- Burglary

Note that Age at Commencement of Risk is scored in different ways depending on whether it is being used for the S-scale or the V-scale.

### ***Age at Commencement of Risk***

“Age at Commencement of Risk” refers to the offender’s age now if he is in the community, or to the age the offender will be when he is discharged from prison (or from some other secure setting that prevents offending in the community). For prisoners it may be convenient to score it on the basis of two ages – a) his age now, b) the age he will be when he could first be released. If this changes the overall risk classification you should report the results using some form of words like: “If Mr Smith were released tomorrow he would fall into risk category XXX, however, he is not eligible for release until [date] and at that time he will fall into risk category XXX”. Researchers using the scale should of course simply use the date of discharge from prison to determine age.

Points are scored differently for age depending on which scale is involved. Table 10 indicates how the points are allocated.

**Table 10: Points Scored for Each Age Band**

Age	18-24	25-34	35-44	45+
S-Scale Points	2	1	0	0
V-Scale Points	3	2	1	0

## *Sexual Appearances*

A sexual appearance is a court appearance for sentencing at which at least one of the offences for which the offender was being sentenced had a sexual element. In the UK, a formal police caution is counted as a court appearance for sentencing.

Offences should be counted as having a sexual element if any of the following criteria are met:

- A. *Sexual Abuse of Children*: The legal charge for which the offender was being sentenced implies illegal sexual behaviour between the offender and a person under the legal age of consent when the offender was either over the age of consent or (if under the age of consent) at least 5 years older than the victim.
- B. *Sexual Assault*: The legal charge for which the offender was sentenced implies illegal sexual behaviour in which the offender used force, threats, alcohol or drugs to obtain sexual interaction with the victim without proper consent. Note that the age of the victim is irrelevant for this criterion.
- C. *Non-Contact Sexual Offences*: This covers illegal sexual behaviour involving; a) flashing (indecent exposure); b) peeping; c) possession or manufacturing illegal pornography; d) obscene telephone calls; e) unwanted obscene suggestions made in person or through other media (telephone; internet).
- D. *Offences with a concealed sexual element*: This refers to offences where the official legal charge does not imply A, B or C above but the assessor judges that it is more likely than not that the underlying behaviour included A, B or C. Examples would include a rape/murder where the conviction was for murder, or, a sexual assault that was reduced through plea bargaining to some other charge. Illegal non-sexual behaviour motivated by specific and unusual sexual interests would also count as concealed sexual offences. Examples would be a man stealing women's underwear in order to gratify a sexual fetish, a man strangling a woman because doing so gave him sexual pleasure or a man engaged in illegal sexual acts with animals.

There are some marginal offenses that it is difficult to know how to classify. Current guidance is that pimping, kerb-crawling and other prostitution-related offenses, and 'failing to register as a sexual offender' should not be

counted as sexual offenses when scoring Risk Matrix 2000. While the new offence of meeting a child following grooming is scored as an attempted contact sex offence. There are also new Orders that a court can make that restrict a potential offender from behaviours that are not sexual offences but which are deemed to be linked to sexual offending for that individual. Violation of these Orders has been defined as a criminal offence. Convictions for Violations of these Orders should not be scored as Sexual Appearances but should be scored as Criminal Appearances.

Count sexual appearances as distinct if the later sexual offence occurred after he had been sentenced for the earlier offence. Thus the underlying concept here is persistence in sexual offending after punishment. Note that it is immaterial how many sexual offences are dealt with on a single sentencing occasion.

*Example 1: The offender is sentenced for sexual assault in 1985 and then commits another sexual offence in 1986 for which he is sentenced in 1987.*

*This counts as 2 sexual appearances.*

*Example 2: The offender is sentenced for sexual assault in 1985 and then he is sentenced in 1987 for a sexual assault that was committed in 1984.*

*This counts as one sexual appearance.*

*Example 3: The offender is sentenced in 1985 for 3 sexual assaults and then commits 4 further sexual assaults in 1986 for which he is sentenced in 1987.*

*This counts as two sexual appearances.*

Where information about the dates of offences is not available, a reasonable approximation for this item is to simply count the number of court appearances for sentencing at which at least one offence had a sexual element.

Note that where both the offender and the victim were under the age of consent at the time of an offence and within 5 years of each other in age, whether it is counted as a sexual offence for the purpose of scoring Risk Matrix 2000 will depend on whether the offence is regarded as a sexual assault. Since prosecution is unusual in these circumstances unless there is some element of coercion, the scorer should seek specific information from

the police or some source that is similarly independent of the offender, to confirm that an assault was not involved.

A complication in scoring this item occurs when an offender is arrested (or even convicted) for a sexual offence, released on bail, and then commits and is arrested for another sexual offence while on bail from the first offence. Under Risk Matrix 2000 scoring rules being arrested, or even convicted, is not counted as a Sentencing Occasion. The offender has not been sentenced until the court has imposed a penalty so both offences are treated as part of the same Sexual Appearance.

Sometimes there will be events that are analogous to a Sexual Appearance but which would not have been specifically investigated in the original research. These include sanctions imposed by military courts; religious authorities that respond to priests who have engaged in sexual abuse by removing them from their positions, requiring them to go through sex offender treatment, and warning their religious superiors about their past offending; and sanction imposed by professional bodies (for example on doctors). Where the offender's behavior was clearly a sexual offense that has been detected and sanctioned by such authoritative bodies, then the evaluator may reasonably choose to interpret this as the equivalent of a Sexual (and Criminal) Appearance. Deciding whether such an analogy is appropriate in an individual case involves an element of professional judgment. In reporting the result, for example to a court, it is recommended that the evaluator explain the basis for their judgment that the events they are relying on involved "persistence after punishment" similar to that involved in an ordinary sentencing occasions.

## *Criminal Appearances*

A Criminal Appearance is a court appearance for sentencing at which at least one of the offences for which the offender was being sentenced was a significant criminal offence.

A significant criminal offence is defined here as one where the court could impose a custodial penalty or community supervision. Note that “could” means that this penalty is available to the courts, not that it was actually imposed in this case. Parking offences, speeding, and other minor driving offences are not treated as significant criminal offences.

As with sexual appearances, to count as a new criminal appearance, at least one of the criminal offenses dealt with on the new sentencing occasion must have been committed after the last sentencing occasion.

Note that if something is a Sexual Appearance it is by definition also a Criminal Appearance. A formal police caution is counted as a court appearance for sentencing

There are some offenses that have not resulted in convictions but which have been scored as a Sexual Appearance. Where you score some event as a Sexual Appearance you should always also count it as a Criminal Appearance.

Note that convictions for pimping, kerb-crawling, prostitution-related offenses, and Violation of the new Orders referred to in the section on Sexual Appearances should all be scored as Criminal Appearances.

### ***Sex Offences against a Male***

In scoring this item count any conviction for a contact sex offence that involves a male victim.

Also count non-contact sex offences involving male victims if the sexual behaviour involved was clearly and deliberately directed at a male. For example, indecent exposure to a group containing males and females would not count, as the males may have only been incidentally present.

Similarly a conviction for possession of illegal pornography that included pictures of males and females would not normally be scored under this item unless there was evidence that the offender had deliberately sought images of males.

Offences against animals are not used to score this item.

### ***Sex Offences against a Stranger***

Count any conviction for a sexual offence against a stranger.

A victim counts as a stranger if either the victim did not know the offender 24 hours before the offence or the offender did not know the victim 24 hours before the offence

“Knowing” minimally involves having physically met, had a conversation with, and being able to recognize the other person.

Offences against animals are not used to score this item.

Do not score this item on the basis of the possession, viewing or downloading of child pornography.

## *Single*

Count as single if never married. Count as “married” if, as an adult, ever lived in a marriage-like relationship with another adult for at least 2 years. The 2 years must be continuous with the same partner. Thus common-law marriages and stable same-sex relationships count as marriage for this purpose. If an offender claims a marriage or marriage like relationship and there is some reason to doubt this claim, then only treat him as married if there is some documentation to substantiate this. Examples of acceptable documentation include a marriage license or a contemporary probation or police report that describes the offender’s relationship at the time that relationship was current.

If the offender has lived in a “marital” type relationship, but sexually abused children within that family, whether or not he counts as Single will depend on how soon after starting to live in a marital relationship he began to abuse the children. If he lived in a marital type relationship for at least 2 years prior to the abuse commencing then count him as having been married. If he started abusing the children within less than 2 years of the marital type relationship beginning, then he should be scored as Single.

### ***Non-Contact Sex Offence***

This covers convictions for illegal sexual behaviour involving:

- a) Flashing (indecent exposure);
- b) Peeping;
- c) Possession or manufacturing illegal pornography;
- d) Obscene telephone calls;
- e) Unwanted obscene suggestions made in person or through other media (telephone; internet).

Do not score one of these offences as “Non-Contact” if they occurred incidentally in the course of committing or attempting a contact offence.

Also do not score as “non-contact” if the underlying behaviour was a contact offence and plea-bargaining or some similar process led to a conviction for a non-contact offence.

Where there is a sexual offense that does not involve physical contact, and is not on the list (a to e) above, you should score it as Non-contact only if the underlying behavior speaks to the presence of a Paraphilia and is of a kind known to occur at a relatively high rate.

If the offender’s only sexual offense is an Internet sexual offense, do not score Non-Contact, regardless of the nature of this offense. If the offender has both an Internet offense and a non-Internet offense then consider the nature of both offenses in determining whether any offense was a Non-contact.

### ***Violent Appearances***

A violent appearance is a court appearance at which the offender was sentenced for a non-sexual violence charge. Count as a violence charge any offence whose legal definition implies the use or threat of force against the person but do NOT score charges that solely imply sexual violence under this item.

Thus Murder, Manslaughter, Wounding, Assault, Robbery, Arson, and Abduction would be scored. Also treat Cruelty to Animals as a non-sexual charge (unless it had a sexual motive).

Formal charges like rape, sexual assault, indecent assault, etc would not be scored under this item.

Similarly, Damage / Vandalism would not be scored (this is force against property, not people).

Charges like burglary, theft, stealing cars etc would not be scored though Aggravated Burglary does involve physical force against a person and so should count as a Violent Appearance.

Possession of a firearm would be scored as Non-Sexual Violence if the firearm was being carried in a context that implied a reasonable possibility of its being used against a person (for example: a firearm carried during a burglary) but not scored if the weapon was clearly kept only for hunting.

Note that a conviction for Murder where examination of the scene of crime and forensic evidence indicated that the victim had also been raped would be scored both as a Sexual Appearance and as a Violent Appearance. However, a conviction for Rape at which the offender had been exceptionally brutal but in which there were no charges other than Rape related to these activities would be scored as a Sexual Appearance but not as a Violent Appearance.

### ***Any Burglaries***

Any convictions for illegally breaking into a building. This includes both breaking into homes and breaking into commercial premises (shops, factories, warehouses) and into other buildings (e.g. a school).

### **13. Instructions for Scoring RM2000/S**

This scale involves two steps. Instructions on the scoring of individual items are given in more detail in an earlier section.

Instructions on scoring step one are given in table 11.

**Table 11: Step One of RM2000/S**

Age	18-24 = 2 points; 25-34 = 1 point; Older = 0 points
Sexual Appearances	1 = 0 points; 2 = 1 point; 3,4 = 2 points; 5+ = 3 points
Criminal Appearances	4 or Less = 0 points; 5 or more = 1 point

Points accumulated across these three items are then turned into four risk categories using table 12.

**Table 12: Step One Categorization**

Category	Points	Label
I	0	Low
II	1-2	Medium
III	3-4	High
IV	5-6	Very High

Instructions for scoring Step two are given in table 13.

**Table 13: Step Two: Aggravating Factors**

Aggravating Factors	Scoring
Male Victim of Sex Offence	No = 0; Yes = 1
Stranger Victim of Sex Offence	No = 0; Yes = 1
Single (Never Married)	No = 0; Yes = 1
Non-Contact Sex Offence	No = 0; Yes = 1

Put risk up one category if Step Two score = 2 or 3. Put up two categories if score = 4. Do not change Step One Risk Category if score = 0 or 1.

#### **14. Instructions for Scoring RM2000/V**

This scale involves just one step, and three items. Points are assigned for each item as indicated in table 14.

**Table 14: Points Assigned for RM2000/V Items**

<b>Risk Factor</b>	<b>Points Assigned</b>
Age	18 to 24 = 3 points; 25 to 34 = 2 points; 35 to 44 = 1 point
Violent Appearances	0 = 0 points; 1 = 1 point; 2,3 = 2 points; 4+ = 3 points
Burglary	None = 0 points; Any = 2 points

Points accrued from each item are summed and V-scale categories assigned as indicated in table 15.

**Table 15: RM2000/V Categorization**

<b>Category</b>	<b>Points</b>	<b>Label</b>
I	0-1	Low
II	2-3	Medium
III	4-5	High
IV	6+	Very High

### **15. Instructions for Scoring RM2000/C**

Combining the categorizations from the other two scales produces categorization on this scale. Assign C-scale points according to the categorizations on the S and V scales as indicated in table 16.

**Table 16: Deriving C-Scale Points from S and V Scale Categories**

<b>S or V Categories</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
C Points assigned	0	1	2	3

Sum C-scale points assigned from S and V scales. Then assign C-scale categories as indicated in table 17.

**Table 17: Deriving C-Scale Categories from C-Scale Points**

<b>Score on C Scale</b>	<b>Label</b>
0	Low
1	Medium
2	Medium
3	High
4	High
5	Very High
6	Very High

## **16. Interpreting Risk Matrix 2000 Scales**

As indicated earlier, the RM2000 risk categories can usefully be thought of as ordered along the risk continuum. The higher numbered categories identify groups of men at a relatively higher risk of being reconvicted for sexual offenses (S-scale), non-sexual violence (V-scale), or overall violence (C-scale).

The scales are most appropriately used to concentrate scarce resources on those who collectively present the greatest risk to the community. These scarce resources might consist of more time in prison (e.g. parole decisions), more intensive treatment interventions, or more intensive supervision arrangements.

Risk Matrix score categories have been given labels (Low, Medium, High, and Very High). Applying labels of this kind represents a value judgment that is relative to a practical purpose. In calling a risk “high” we are implying that it is sufficiently high to be worth worrying about, taking action, etc. The practical purpose here is dividing convicted sexual offenders into groups that represent different levels of risk to the community.

Risk Matrix 2000 risk categories are based on static risk factors: simple facts about the offender’s past that are known to have a statistical relationship to reconviction rates. A comprehensive risk assessment may also consider the possible effects of completion of treatment, long-term psychological risk factors, and acute risk factors.

## **17. Applying RM2000/S with Marginal Cases**

Application of RM2000 with most convicted sexual offenders is straightforward. Offenders like them were well represented in the samples used to derive or test RM2000 and it is reasonable to expect the results obtained in these research samples to be relevant in assessing their risk of sexual recidivism. There are other groups of sexual offenders for whom RM2000 is clearly not applicable. Examples would be young adolescent sexual offenders or female sexual offenders. Between these groups are marginal cases where there are some grounds for expecting RM2000 to be applicable but also some grounds for questioning its applicability. This section identifies some of these marginal groups and gives guidance on when and how to apply RM2000 with them.

The following marginal groups are considered.

- Sexual Murderers
- Internet Only Offenders
- Mentally disordered offenders
- Low functioning offenders
- Older adolescent offenders
- Older adult offenders

Before considering these groups in particular it is useful to articulate some general principles. Six principles are followed.

First, how well represented was this kind of offender in the samples used to develop or test RM2000.

Second, how well represented was this kind of offender in samples used to develop or test closely similar actuarial risk assessment instruments.

Third, how well represented was this kind of offender in studies that supported the predictive value of the dimensions that underlie RM2000 and similar actuarial instruments (sexual deviance; antisociality; immaturity).

Fourth, are there theoretically plausible or empirical reasons for supposing that the underlying dimensions would have a different predictive value for this kind of marginal case?

Fifth, are there theoretically plausible or empirical reasons for supposing that the items used by RM2000 to index these dimensions will be less good at doing this for this kind of marginal case?

Sixth, are there theoretically plausible or empirical reasons for supposing that this kind of marginal case will have a recidivism rate that is distinctively different from that which would be expected on the basis of the RM2000 risk category into which they fall.

How “well represented this kind of offender” was in research studies is a matter of degree. It is worth distinguishing several points on the continuum of “well-representedness”.

At one extreme the kind of offender has been broken out as a separate subgroup and analyses of predictive accuracy run specifically for this subgroup. For example, if “the kind of offender” is extra-familial child-molester then the question would be has predictive accuracy been assessed for samples of offenders composed solely of extra-familial child-molesters.

Next to this is the kind of offender that was present in research studies in sufficient numbers that, if the scale had not worked for this kind of offender, results for the overall sample would have been poor. If at least a quarter of the offenders in research samples are of this type then it is reasonable to expect that the scale is applicable to them.

### *Sexual Murders*

Three kinds of sexual murder can usefully be distinguished.

First, there are men who have committed and been convicted for prototypical sexual offences who also killed the victim of the sexual assault and were additionally convicted of murder or manslaughter.

Offenders of this kind would have been included in the original research samples but they would have been present in small numbers so that one cannot infer from their presence in the original samples that RM2000 must have had reasonable predictive accuracy with them. However, there is no obvious reason for supposing that RM2000 would not predict future sexual offending for them. One might argue that this group would be more callous (and therefore more risky) than prototypical sexual offenders. On the other hand, one could argue that guilt about committing murder would act as a

deterrent from committing further sexual offences. Neither argument is particularly plausible, and in as much as they both possess some marginal plausibility, they might be regarded as cancelling each other out. There is some real variation among prototypical sexual offenders (incest offenders versus extra-familial child-molesters versus rapists) and there is no persuasive reason to suppose that this group would have materially different sexual recidivism rates from (say) rapists.

Second, there are those men who convicted of murder but for whom there is evidence that they also sexually assaulted their victim prior to or as part of the murder. These men might have been in one of the original RM2000 research samples since such men might have been referred for sexual offender treatment. However, they would only have been present in very small numbers. Basically the same arguments apply as with the first kind of sexual murder. It is worth noting that this kind of offender would have been present in some numbers in one of the Static-99 (Hanson & Thornton, 2000) samples and that that scale seemed to work well enough in that sub-sample.

In the writer's view it is reasonable to use RM2000 with both these groups of offenders.

The third kind of sexual murder is where there was no prototypical sexual offence but there was a murder with a sexual element, for example, a murder in which the victim was sexually mutilated. Offenders who had committed this kind of offence would not have been in the original RM2000 numbers in other than minute numbers. They would have been in the Static-99 sample referred to above.

Since this is a qualitatively different kind of offence from prototypical sexual offences some caution must be observed in applying RM2000 to men who have committed them. However, it is plausible to suppose that sexual deviance, general antisociality, and immaturity would still be relevant risk factors. Indeed, since the type of offence seems to imply both an offence-related sexual interest and an unusual level of callousness (and hence a greater likelihood of Hare's deadly duo – of psychopathy and offence-related sexual interests), one might argue that RM2000 would be likely to underestimate the level of risk. This is particularly the case because similar prior offences may not have been recognized as sexual.

In the light of this it is suggested that, in the absence of new research specifically examining this population, RM2000 be used with this group only with considerable caution, and accompanied by a more comprehensive clinical assessment which would be given more weight.

### Internet-only Offenders

Offenders who have only been convicted of Internet offences would not have been present in the original RM2000 samples.

Additionally, for at least some Internet offences, the offenders may have the sense that they are not harming anyone (for example, downloading some child pornography). Indeed this view might be shared by some non-offenders. It is possible therefore that antisociality contributes less to the prediction of future Internet offences than it would to the prediction of offences that are more obviously antisocial. On the other hand some Internet offences would seem to more directly involve impacting someone else (for example: downloading moving images depicting an adult anally penetrating a child) and so might draw more on antisociality, additionally all Internet offences involve rule-breaking and so would draw on antisociality to some extent. Some Internet offences would seem to draw heavily on the sexual deviance dimension (for example: downloading child pornography would seem to imply a strong sexual interest in children) and there is some research evidence that child-pornography offences are more strongly associated with a sexual preference for children than other kinds of sexual offence (Seto et al, 2005).

Many Internet offences would seem to meet the scoring criteria for the RM2000 item “Non-contact”. A key issue then is whether these offences truly imply the raised level of risk implied by getting a point for Non-contact. This may well be the case but presently there is no good research evidence about this issue.

Until this research has been carried out, it is proposed that the Non-contact item not be scored for Internet only offenders. Scoring RM2000 in this way for Internet-only offenders produces a conservative scoring where we can be more confident that those classified as high risk really are high risk. This way of scoring may however underestimate risk for some Internet-only offenders.

Altogether these considerations suggest that RM2000 would be predictive for Internet offences just as it is for prototypical contact sex offences

A more significant concern is the possibility that Internet-only offenders may largely comprise a group that would not have committed prototypical sexual offences. Thus the primary risk that this group may present is of committing further Internet sex offences.

Where an offender has convictions for both Internet sexual offences and prototypical sexual offences then the scoring rules should be applied in the standard way and Non-contact can be scored on the basis of Internet offences (if appropriate, note some Internet offences are attempted contact offences).

#### *Mentally Disordered Sexual Offenders*

The original RM2000 research samples would have included some mentally disordered sexual offenders as significant numbers of such people are held in prison but a mentally-disordered sexual offender who solely received a mental health disposal would not have been included in these research samples. However, one of the main Static-99 samples (Hanson and Thornton, 2000) was composed of mentally-disordered offenders and Static-99 had reasonable predictive accuracy in that sample. Thus it is reasonable to expect that RM2000 (which is quite similar to Static-99) would also work with mentally disordered sexual offenders.

There are two complications that sometimes occur with this group. First, sometimes their past offences may have received mental health disposals, even being informally diverted to some mental health disposal rather than being prosecuted. If these events are not identified and counted (for example as Sexual Appearances) the RM2000 classification may underestimate risk. Secondly, mentally disordered offenders often have psychological risk factors (such as personality disorders) that are not fully tapped by the RM2000 items. This too will lead to an underestimation of risk.

Thus when applying RM2000 with mentally disordered sexual offenders it should be accompanied by a more comprehensive psychological assessment that is sensitive to this potential underestimation of risk.

### Low functioning offenders

Sexual offenders with an IQ below 70 would have been rare in the original research samples but offenders with IQs between 70 and 80 should have been present in the original samples in reasonable numbers. Additionally, RRASOR, an instrument that is somewhat similar to RM2000, has been shown to have reasonable predictive accuracy with low functioning offenders.

The general problem with this group of offenders is that their past offending may sometimes have been dealt with by non-criminal justice disposals and that consequently a count of Sexual Appearances that considers only convictions and criminal justice sanctions may lead to a RM2000 classification that underestimates risk.

### Older adolescents offenders

This refers to males whose most recent sexual offence was committed aged 16 or 17 but who now may be aged anything from 16 upwards.

If they are aged at least 18 then formally they fall within the range of offenders for whom RM2000 is recommended. Such offenders were represented in reasonable numbers in the younger age-band (18 to 24 on release) in the original RM2000 research samples. There has also been a specific study of this group with a closely similar instrument (Static-99) which found that it had good predictive accuracy with them (Liedecke & Marbibi).

If they are aged 16 or 17 on release they are formally outside the range for which RM2000 is recommended. However, a closely similar instrument (Static-99) has been tested with a sample that was largely composed of this group and good predictive accuracy was found (Beech et al, in prep) thus it may well be that RM2000 works with these older adolescents. At present it is recommended that if an actuarial assessment of these offenders is required, then Static-99 should be used but that the resulting classification should be treated with caution, and supplemented by a more comprehensive clinical evaluation.

### Older adult offenders

Among adult sexual offenders, there is a trend for older men to have lower sexual recidivism rates than younger men (Hanson & Bussiere, 1998).

There are three controversial issues concerning how the offender's age qualifies the results obtained with actuarial instruments like RM2000.

**First**, does the actuarial instrument fully take into account the effect of age on sexual recidivism? Specifically, does RM2000 fully take into account the effect of the offender's age on sexual recidivism?

In the research going into the creation of the instrument Static-2002 Hanson and Thornton (2003) explored the relationship between age and sexual recidivism in a range of samples. They found that most of this decline had occurred by the age of 35. RM2000 codes three levels of age (18 to 24; 25 to 34; Older) so it seems to allow for these major age trends. Some research (Barbaree et al, 2003) has reported a strong continuing decline in sexual recidivism with age after the age of 35. This, however, has not been found in other samples (Doren, in press). Thus RM2000 takes into account the age trends that have been found most consistently.

**Second**, how applicable are actuarial instruments in general, and RM2000 in particular, to elderly sexual offenders? There is only a limited amount of research into the sexual recidivism of offenders aged 60 or older but most of it suggests a particularly low sexual recidivism rate for elderly sexual offenders. The most systematic and largest scale study is that by Hanson (2005) which shows sexual recidivism rates broken down by age on release for the different risk bands defined by Static-99. This indicates that Static-99 risk bands do distinguish groups that show different sexual recidivism rates even in for elderly offenders. However, for each Static-99 risk band, the elderly offenders had a materially lower sexual recidivism rate than younger offenders in the same risk bands.

Since Static-99 is pretty similar to RM2000 it seems very likely that similar results would have been obtained if it had been used to create the risk bands in the study. Thus it is reasonable to expect that RM2000 risk bands will over-estimate risk for elderly offenders.

One caution in applying this notion is important. The research studies have generally distinguished an elderly offender group beginning around the age of 60. However, there is no evidence that risk declines specifically at the age of 60. Rather, within the 60+ group at some (not yet known) point, risk is materially lower than would be expected on the basis of RM2000 risk bands.

**Third**, is the offender's age on sentence or their age on release more relevant to sexual recidivism?

Research into the relationship between sexual recidivism and age has generally used samples in which offenders were serving relatively short sentences. Thus their age on release was close to their age on sentence. This means that we cannot tell from the research whether it is the offender's age on release or their age on sentence that matters. This becomes a big issue where the offender being assessed has served a long sentence

It is suggested that where there is a large difference between age on sentence and age on release, the evaluator should calculate the RM2000 risk classification based on either the age of sentence plus 2 years (this was the average time served before release for prisoners in one of the original RM2000 research samples) or the offender's age as it will be when he is released. If there is a difference between the resulting risk classifications then the evaluator might reasonably conclude that the offender's risk falls somewhere in that range. For example, if the two methods gave Medium and High classifications then the evaluator might conclude that his risk was properly assessed as falling between Medium and High. This will properly express the degree of uncertainty we have about the risk presented by offenders who have served long sentences.

## **18 Acknowledgements**

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## **20. RISK MATRIX 2000 SCORING FORM**

<b>Offender Identification Information</b>	<b>Scorer Identification Information</b>
Family Name	Family Name
Forenames	Forenames
Date of Birth	Date RM2000 Completed
Identification Number	

### **RM2000/S Scale – Risk for Sexual Recidivism**

#### **Step One: Scoring Risk Factors**

Circle the number of points that apply for each risk factor

Age	18-24 = 2 points; 25-34 = 1 point; Older = 0 points
Sexual Appearances	1 = 0 points; 2 = 1 point; 3,4 = 2 points; 5+ = 3 points
Criminal Appearances	4 or less = 0 points; 5 or more = 1 point

#### **Step One: Categorization**

Circle the total number of points from the previous table, and the corresponding Category and Label.

Points	Category	Label
0	I	Low
1-2	II	Medium
3-4	III	High
5-6	IV	Very High

#### **Step Two: Aggravating Factors**

Circle the number of points that apply for each aggravating factor.

Male Victim of Sex Offense	No = 0 points; Yes = 1 point
Stranger Victim of Sex Offense	No = 0 points; Yes = 1 point
Single (Never in Marital Type Relationship)	No = 0 points; Yes = 1 point
Non- Contact Sex Offence	No = 0 points; Yes = 1 point

#### **Step Two: Revised Risk Category**

Put the risk category up one (e.g. from I to II or from II to III, or from III to IV) if two or three aggravating factors apply, and up two categories (e.g. from I to III, or from II to IV) if four aggravating factors apply. Circle the Revised Risk Category and Label.

<b>Revised Risk Category</b>	I	II	III	IV
<b>Label</b>	Low	Medium	High	Very High

**RM2000/V – Risk for Violent Recidivism**

<b>Risk Factor</b>	<b>Points Assigned</b>
Age	18 to 24 = 3 points; 25 to 34 = 2 points; 35 to 44 = 1 point; Older = 0 points
Violent Appearances	0 = 0 points; 1 = 1 point; 2-3 = 2 points; 4+ = 3 points
Burglary	None = 0 points; Any = 2 points

Enter the number of points accrued above in the table below and circle the corresponding Risk Category and Label.

<b>Points</b>	<b>Risk Category</b>	<b>Label</b>
0-1	I	Low
2-3	II	Medium
4-5	III	High
6 or more	IV	Very High

**RM2000/C – Risk for Sexual and Violent Recidivism Combined**

Assign C-scale points from each of the V and S scale Categories

<b>S or V Categories</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
C Points Assigned for S scale	0	1	2	3
C Points Assigned for V scale	0	1	2	3

**C-scale Labels derived from C-Scores**

Circle the C-scale score and Label that applies.

<b>Score on C-Scale</b>	<b>Label</b>
0	Low
1	Medium
2	Medium
3	High
4	High
5	Very High
6	Very High